Exhibit B
(previously filed as Dkt. 686-1)

IN THE UNITED STATES DISTRICT COURT FOR THE
EASTERN DISTRICT OF VIRGINIA
Alexandria Division

UNITED STATES OF AMERICA, *et al.,*	)	
	)	
Plaintiffs,	)	
	)	
v.	)	1:23-cv-108 (LMB/JFA)
	)	
GOOGLE LLC,	)	
	)	
Defendant.	)	

EXPERT REPORT OF DR. THOMAS S. RESPESS III

THOMAS S. RESPESS III

December 22, 2023 †

† Amended to reflect the errata filed January 13, 2024.

damages to the United States in the form of supracompetitive fees charged to U.S. government agencies.[2]

15.   The United States has asked me to quantify the amount of overcharges to advertisers and publishers generally and damages to the following eight government agencies ("Federal Agency Advertisers" or "FAAs") from January 25, 2019 through January 24, 2023 ("Damages Period"):

- Three Department of Defense ("DOD") agencies:
  - Army
  - Navy
  - Air Force
- Five additional agencies:
  - United States Postal Service ("USPS")
  - Census Bureau ("Census")
  - Department of Veterans Affairs ("VA")
  - National Highway Traffic Safety Administration ("NHTSA")
  - Centers for Medicare & Medicaid Services ("CMS")

16.   In calculating damages incurred by the FAAs, I assume that Google has violated the antitrust laws as alleged in the amended complaint in this action. I have not been asked to independently evaluate the legal claims in this matter. I have not formed any opinion regarding the legal claims, nor have I performed any legal analysis in my report.

17.   My analysis relies in part on the opinions of another expert retained by the United States in this matter, Dr. Timothy Simcoe, regarding the alternative percentage that Google's ad exchange would have retained from advertisers who purchased display advertisements on the open web absent Google's anticompetitive conduct alleged in the amended complaint ("AdX But-For Take Rate"). While I have reviewed Dr. Simcoe's analysis, I do not purport to independently evaluate that analysis, but rather use it as an input to calculate overcharges and advertiser damages.

18.   The United States has also asked me to analyze the profitability of aspects of Google's display advertising product area. I understand that another expert, Dr. Robin Lee, may rely on my profitability analyses in forming his opinions.

19.   I performed my analyses and reached the opinions and conclusions contained in this report by analyzing the available data and documents in this matter. I have applied standard and well-

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[2]   *Id.* at ¶¶ 262-78, 340-41.

known accounting methods and techniques used to measure damages and profitability. I have also drawn on my education, professional training, and experience in finance, accounting, and damages.

20.   A list of documents that I have relied on in forming my opinions is attached as **Appendix B**. I understand that discovery in this matter is ongoing, and that Google will be providing reports from its experts. Thus, although I do not anticipate that my conclusions will change in any material way, I reserve the right to modify or supplement my conclusions as additional information is made available to me, or as I perform further analysis.

21.   I am being compensated for my work in this matter at a rate of $600 per hour. Staff at The Brattle Group ("Brattle") have assisted me by performing work at my direction. All the opinions and conclusions stated in this report are my own. Neither Brattle's compensation nor my compensation is contingent on my opinions, testimony, or the outcome of this matter.

III. Summary of Opinions

A.   AdX Overcharges and Damages to FAAs

22.   My analysis of overcharges borne by publishers and advertisers includes overcharges on transactions that flowed through Google's advertising exchange, AdX, from Google's demand side platform ("DSP"), Display & Video 360 ("DV360"), and its Google Ads products. I calculate that Google overcharged worldwide advertisers and publishers an amount ranging from $483.8 million to $1.7 billion during the Damages Period. I similarly calculate that the overcharge to advertisers based in the United States and their publishers and to U.S. government agencies and their publishers ranges from $208.7 million to $765.3 million and from $1.5 million to $6.1 million, respectively.

23.   My analysis of damages borne by FAAs includes AdX and platform fee overcharges on transactions that flowed through AdX from DV360, Google Ads, and The Trade Desk ("TTD"). Google overcharged the FAAs a total of $676,779 assuming a 10 percent AdX But-For Take Rate, $181,728 assuming a 16.2 percent AdX But-For Take Rate, and $149,789 assuming a 16.6 percent AdX But-For Take Rate.

24.   DSPs and Google Ads charge what are called platform fees based on the amounts of an advertiser's spend that flow into AdX. As a result of the alleged AdX overcharge, the FAAs also paid more in platform fees to DSPs (DV360 and TTD) and Google Ads. **Figure 1** below summarizes damages to the FAAs from both the AdX overcharge and platform fees overcharge, and prejudgment interest thereon. Total damages range from $504,531 to $2,289,751.

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40.   In order to narrow the data to those transactions in the scope of my damages analysis, I have applied filters to the RFP60 Data that are consistent with the relevant markets at issue in this matter. The RFP60 Data have variables which identify the parties purchasing the ads (the advertisers and their agents), the amount of spend, and the type of ad placed. I use this third category of variables to narrow the transactions down to the Relevant Product Markets:

- *Inventory Source*: I exclude all transactions that did not flow through Google's AdX.

- *Transaction Type*: Dr. Simcoe's analysis of the AdX But-For Take Rate relates specifically to transactions that pass through AdX via Open and Private Auctions.[23] To ensure that my calculation of damages—which relies on Dr. Simcoe's analysis—is apples-to-apples with Dr. Simcoe's analysis, I exclude all transactions that are not Open or Private Auction through AdX.

- *Environment* and *Device Type*: In order to include only transactions that occur in a browser, I exclude transactions that are tagged with "App" or "ConnectedTV." To be conservative, I also exclude "Unknown" transactions, because I do not know to what these relate.

- *Product Area*, *Ad Format*, *Instream or Outstream*: I include only display transactions, including outstream video but excluding instream video—ads that play "before, during, or after a streaming video." I exclude transactions tagged "instream," "YouTube," and "audio." I also exclude "blank" transactions, because I do not know to what these relate. The RFP60 Data do not include search ad transactions.[24]

- *Pub Product*: I exclude transactions tagged with "Video," "Game," and "App" to eliminate instream video, game, and in-app transactions.

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[23]   Expert Report of Dr. Timothy Simcoe, December 22, 2023 ("Simcoe Report"), ¶ 63. ("Professor Lee's Report defines a set of relevant antitrust markets for publisher ad servers, ad exchanges, and advertiser ad networks. I have reviewed his analysis and adopt his conclusion that these are relevant antitrust markets for the purpose of assessing Google's alleged anticompetitive conduct. I also adopt Professor Lee's conclusion that Google has substantial and sustained market power in the market for each of these ad tech tools."); *see also,* Lee Report, Section IV.D, wherein Professor Lee states that for exchange market shares he includes open auction and private auction, among others.

[24]   Letter from David Pearl to Kelly Garcia, July 7, 2023, p. 2 ("The '**Google Ads**' dataset includes, for each month from January 2014 to December 2022, the following monthly data on web display transactions . . . "); p. 2 ("The '**DV360**' dataset includes, for each month from January 2016 to December 2022, the following monthly data on web display transactions . . . "); p. 5 ("The '**XP**' dataset includes, for each month from January 2005 to March 2023, the following data on display transactions . . . "); p. 6 ("The '**XBridge DV360**' dataset includes, for each month from January 2012 to March 2023 the following data on display transactions . . ."). (**Bold** emphasis in original.)

41.   **Figure 5** shows variables in the RFP60 Data, the available filters on those variables, and the filters I chose in order to isolate transactions in the Relevant Product Markets. The bolded items represent the filters I chose for my analysis.

Figure 5: DV360 and Google Ads Product Market Filters[25]

inventory_source	transaction_type	environment	device_type	product_area
AdExchange	**Open Auction**	**Desktop**	**Tablet**	**DVA**
3PE	**Private Auction**	**Mobile Web**	**Mobile**	YouTube
AdMob	Preferred Deals	**Web**	**Desktop**	
AdSense	Programmatic Guarantee	Unknown	ConnectedTV	
YouTube		App	Other	
Google Properties			Unknown	
Demand Product				

ad_format	instream_outstream	revenue_type	pub_product	
Display	**Outstream**	**Media Cost**	**AdExchange**	
Video	[blank]	Platform Fee	AdExchange - Video	
Audio	Instream	Other Fees	AdExchange - Games	
			AdExchange - App	
			*	

Sources: DV360 Xbridge Monthly Data and Google Ads Monthly Data.

42.   **Figure 6** shows variables in TTD Data, the available filters on those variables, and the filters I chose for the same reasons I filtered the RFP60 Data. TTD Data do not have a filter for instream/outstream video, so I assume all video ads in TTD Data are instream video and therefore I conservatively exclude them.

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[25]   Google Ads does not include any data on Private Auctions. Although the product market does include some types of "outstream" video ads, the *pub_product* "AdExchange–Video" refers exclusively to instream video. *See* Letter from David Pearl to Kelly Garcia at p. 9, October 6, 2023. ("**AdExchange–Video-**Instream video ads transacted via Google's AdX sellside product.") (emphasis in original).

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Figure 6: TTD Product Market Filters

InventoryType	MediaType	MarketType	SupplyVendor
Display	**Display**	**Open Market**	**google**
Mobile Standard Web	Video	**Private Auction Variable Price**	*
Mobile Optimized Web	Native	Private Auction Fixed Price	
Video	Audio	Other	
Mobile Video Standard		Programmatic Guaranteed	
Mobile Video Optimized Web			
Mobile InApp			
Native			
Audio			
Mobile Video InApp			
Connected TV			
Digital Out Of Home			

Sources: TTD_DOJ-GOOG23-0012987; TTD_DOJ-GOOG23-0033644. * denotes many other SupplyVendors.

43.   **Figure 7** below shows the dollar amounts of FAAs' open web display transactions through DV360, Google Ads, and TTD. The FAAs' open web display purchases through DV360/Google Ads/TTD and AdX during the Damages Period was $57.5 million ($44.1 million through DV360 + $12.3 million through Google Ads + $1.2 million through TTD).

**Figure 7: FAA's Open Web Display Ad Purchases through DV360, Google Ads, and TTD
January 25, 2019 – January 24, 2023**

			AdX
DV360	[1]	$	44,084,532
Google Ads	[2]		12,261,045
TTD	[3]		1,164,529
Total	[4]	**$**	**57,510,106**

Sources and notes: Totals from **Figure 11**. Dollar amounts for DV360 are the sum of Media Cost and Platform Fee, dollar amounts for Google Ads are Gross Revenue, and dollar amounts for TTD are Gross Revenue.

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B.   MY DAMAGES ANALYSIS INCLUDES MULTIPLE FAA PURCHASE PATHWAYS

44.   The FAAs purchased display ads from Google using various ad agencies.[26] Some of those ad agencies engaged other ad agencies, such as related entities (parent, subsidiary, or sister companies) or subcontractors, to execute the FAAs' ad purchases. I refer to the first group, with whom the FAAs contracted, as "prime ad agencies," and the second group as "sub ad agencies."

45.   I identified FAAs in the RFP60 Data and TTD Data and then identified specific combinations of FAAs and ad agencies. The RFP60 Data include variables called *advertiser_parent_name, advertiser_company_name,* and *advertiser_division_name* for Google Ads and additional variables called *DV360_advertiser_name and DV360_partner_name* for DV360.[27] TTD Data include a variable called *AdvertiserName.* I refer to these variables collectively as "Advertiser Identifier Variables." I then used the Advertiser Identifier Variables to identify the FAAs ("FAA IDs").[28]

46.   The RFP60 Data also include variables called *third_party_parent_name*, *third_party_company_name*, *third_party_division_name*, and *third_party_type* for Google Ads and additional variables called *DV360_partner_name* and *DV360_advertiser_name* for DV360.[29] TTD Data include a variable called *PartnerName*. I refer to these variables collectively as "Ad Agency Identifier Variables," and I used them to identify ad agencies that helped a particular FAA.

47.   I refer to each unique combination of FAA, prime ad agency, and (as applicable) sub ad agency as an "FAA Purchase Pathway." For example, for DV360, USPS used Universal McCann as its prime ad agency, and Universal McCann used Matterkind (an affiliate owned by the same

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[26]   *See, e.g.,* USAF-ADS-0000771835 (contract number FA300218D0008 between the Air Force and GSD&M); USAF-ADS-0000414286, at -286–322.

[27]   Each Google "name" variable has a corresponding "id" variable. *e.g.*, *advertiser_division_name* has a unique *advertiser_division_id* associated with it.

[28]   The RFP60 Data includes many advertisers with FAA-sounding words in Advertiser Identifier Variables, such as "Old Navy" (which is part of The Gap, Inc., a clothing retail company). I limited my damages analysis to values in the Advertiser Identifier Variables which the United States instructed were associated with FAAs.

[29]   Most of the time, *dv360_advertiser_name* contains advertiser identifying information and *dv360_partner_name* contains ad agency information, but this is not consistent. One of these fields sometimes contains what appears to be a short name of the particular ad campaign the ad agency was running on behalf of the FAA.

parent entity, IPG) as a sub ad agency. The combination of "USPS | Universal McCann | Matterkind" is a unique FAA Purchase Pathway. The ad agencies listed in an FAA Purchase Pathway reflect the ad agencies involved, in one way or another, in assisting the FAA in purchasing advertising from Google.[30]

48.   **Figure 8**, **Figure 9**, and **Figure 10** below summarize the FAA Purchase Pathways for DV360, Google Ads, and TTD, respectively, which I include in my damages analysis. I assign each FAA Purchase Pathway a "Short Name" and a "Reference Name" for ease of reference. I base the Short Name on the values in the Advertiser Identifier Variables, the values in the Ad Agency Identifier Variables, information from Google invoices, and information from ad agency invoices or other invoice data.[31]

49.   The gray cells in **Figure 8** indicate values where I omit additional information for purposes of pathway identification because the information for that variable in the RFP60 Data has duplicative information or information about a specific ad campaign. For example, I am able to identify Army.1 using DV360 Partner Name ("OMD-Army"), which tells me that the ad agency is OMD and that the client is Army; and Advertiser Division Name, which confirms that "Army" in DV360 Partner Name refers to the "US Army" and not some other advertiser with the word "Army" in its name. There are several DV360 Advertiser Names associated with this combination of DV360 Partner Name and Advertiser Division Name, including "A_A1B_OMD" and "A_A2B_OMD" (which appear to be campaign identifiers). These DV360 Advertiser Names do not provide any additional useful identifying information, so I exclude them from this figure to avoid confusion.

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[30]   My use of the word "Purchase" in the defined term FAA Purchase Pathway refers to the FAAs' purchase of advertising through AdX and does not indicate any particular financial arrangement or sequence of financial arrangements among an FAA and ad agencies.

[31]   For FAA Purchase Pathways VA.1 and VA.2, the VA worked with both J. R. Reingold and DCG on different campaigns. Based on invoices, DCG used J.R. Reingold's DV360 "seat" for purchases. *See* VET-AF-ADS-0000377196, at -206.

Figure 8: FAA Purchase Pathways through DV360 Included in Damages Analysis[32]

FAA	Reference Name	Short Name	Advertiser Division Name	DV360 Advertiser Name	DV360 Partner Name
Air Force	Air Force.1	Air Force | GSD&M | DV360	US Air Force	Air Force	GSD&M
Army	Army.1	Army | DDB | OMD | DV360	US Army		OMD-Army
Census	Census.1	Census | Y&R | JR Reingold | DV360	Census	Reingold (RG)	
Census	Census.2	Census | Y&R | TDW | DV360	Census	TDW+Co (TDW)	
Census	Census.3	Census | Y&R | C1W | DV360	Census	Culture 1 World (C1W)	
CMS	CMS.1	CMS | Weber Shandwick | DV360	Healthcare Exchanges	CMS - HealthCare.Gov	IPG - Weber Shandwick
NHTSA	NHTSA.1	NHTSA | Stratacomm | GMMB | DV360	NHTSA		GMMB, Inc.
USPS	USPS.1	USPS | Universal McCann | Matterkind | DV360	US Postal Service		Matterkind US
VA	VA.1	VA | DCG | JR Reingold | DV360	Department of Veterans Affairs		J.R. Reingold & Associates
VA	VA.2	VA | JR Reingold | DV360	Department of Veterans Affairs		J.R. Reingold & Associates

Sources: DV360 XBridge Monthly Data and DV360 Monthly Data.

Figure 9: FAA Purchase Pathways through Google Ads Included in Damages Analysis

FAA	Reference Name	Short Name	Advertiser Division Name	Third Party Parent Name	Third Party Division Name
CMS	CMS.2	CMS | Weber Shandwick | Google Ads	Healthcare Exchanges	Interpublic Group	Weber Shandwick
Navy	Navy.1	Navy | Y&R | Wavemaker | Google Ads	US Navy	WPP Group	Wavemaker
NHTSA	NHTSA.2	NHTSA | Stratacomm | GMMB | Google Ads	NHTSA	Omnicom Group	GMMB

Source: XP Daily Monthly Data.

Figure 10: FAA Purchase Pathways through TTD Included in Damages Analysis

FAA	Reference Name	Short Name	Advertiser Name	Partner Name
Navy	Navy.2	Navy | Group M | TTD	NAVY	GroupM - MEC - Multiple - US - USD
USPS	USPS.2	USPS | Universal McCann (IPG) | Matterkind | TTD	USPS	Matterkind US

Sources: TTD_DOJ-GOOG23-0012987 and TTD_DOJ-GOOG23-0033644.

50.   In some instances, the RFP60 Data do not indicate the ad agencies that FAAs used for certain purchases ("Unknown Ad Agency Purchase Pathways"). Without knowing the ad agencies involved in those transactions, I cannot identify and review ad agency documents and information to confirm that the FAAs paid the amounts that Google charged for ad tech services. Therefore, I

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[32]   Advertiser Division Name comes from DV360 XBridge Monthly Data whereas the columns DV360 Advertiser Name and DV360 Partner Name come from DV360 Monthly Data. The data from DV360 Monthly Data may have more specifics on campaign names.

exclude Unknown Ad Agency Purchase Pathways from my damages analysis. The United States also asked me to exclude certain FAA Purchase Pathways.[33] These exclusions result in a more conservative estimate of damages.

51.   **Figure 11** below shows the amounts of FAA Purchase Pathways included and excluded from my damages analysis. (Each row in **Figure 11** can contain multiple pathways.) In total, I include approximately $46.4 million and exclude approximately $11.0 million of the FAAs' total advertising spend of approximately $57.5 million on open web display advertising that went through DV360/Google Ads and AdX. These figures are shown in red boxes in **Figure 11**.

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[33]   For the USPS | Universal McCann | Matterkind | Google pathway, the United States has instructed me to remove amounts billed for services in 2019 and 2020 from damages, a total of $2.8 million. For the USPS | Universal McCann (IPG) | Matterkind | TTD pathway, the United States has instructed me to remove amounts billed for services in 2019 and 2020 from damages, a total of approximately $92,000.

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**Figure 11: Advertising Spend of FAA Purchase Pathways
Included and Excluded from Damages Analysis[34]
January 25, 2019 – January 24, 2023**

		Included	Excluded			Total
			Excluded by United States	Unknown Ad Agency	Subtotal - Excluded	
		[A]	[B]	[C]	[D] = Σ([B]:[C])	[E] = [A] + [D]
DV360	[1]					
Air Force	[2]	$ 5,159,817	$ -	$ -	$ -	$ 5,159,817
Army	[3]	15,099,145	1,709,903	-	1,709,903	16,809,048
Census	[4]	1,171,558	29,601	-	29,601	1,201,159
CMS	[5]	1,462,531	1,009,899	-	1,009,899	2,472,431
NHTSA	[6]	969,860	25	-	25	969,885
USPS	[7]	7,307,130	4,287,755	-	4,287,755	11,594,885
VA	[8]	4,990,890	886,417	-	886,417	5,877,307
Subtotal - DV360	[9]	$ 36,160,931	$ 7,923,600	$ -	$ 7,923,600	$ 44,084,532
Google Ads	[10]					
Air Force	[11]	$ -	$ 66,727	$ 19	$ 66,746	$ 66,746
Army	[12]	-	1,623	36,190	37,813	37,813
Census	[13]	-	99,218	82,904	182,122	182,122
CMS	[14]	8,291,595	345,255	1,998,744	2,343,999	10,635,594
Navy	[15]	275,938	-	13,917	13,917	289,855
NHTSA	[16]	808,154	-	18,879	18,879	827,033
USPS	[17]	-	62,579	873	63,452	63,452
VA	[18]	-	142,926	15,504	158,430	158,430
Subtotal - Google Ads	[19]	$ 9,375,687	$ 718,328	$ 2,167,029	$ 2,885,358	$ 12,261,045
TTD	[20]					
Census	[21]	$ -	$ 10,771	$ -	$ 10,771	$ 10,771
CMS	[22]	-	4,882	-	4,882	4,882
Navy	[23]	831,072	-	-	-	831,072
NHTSA	[24]	-	48,257	-	48,257	48,257
USPS	[25]	70,333	199,214	-	199,214	269,547
Subtotal - TTD	[27]	$ 901,405	$ 263,124	$ -	$ 263,124	$ 1,164,529
Total	[28]	$ 46,438,023	$ 8,905,053	$ 2,167,029	$ 11,072,082	$ 57,510,106

Sources: DV360 XBridge Monthly Data, DV360 Monthly Data, Google Ads Monthly Data, XP Daily Monthly Data, TTD_DOJ-GOOG23-0012987, TTD_DOJ-GOOG23-0033644. [A]: These FAA Purchase Pathways are in scope and are included in the damages analysis. [B]: The United States has instructed me to exclude these FAA Purchase Pathways. [C]: These FAA Purchase Pathways have no information in the Advertiser Identifier Variables. Therefore, it is not possible to determine the ad agencies involved in these FAA Purchase Pathways, and I have excluded them from my damages analysis.

Note: In Column [A], I exclude USPS spend for amounts Google invoiced in 2019 and 2020 for the USPS Pathways. See notes to **Figure 16** for more information.

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[34]   Data for this table has been filtered in the same manner as for **Figure 7.**

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VII. AdX Overcharges and Damages to FAAs

A. OVERVIEW OF DAMAGES TO FAAS

52.   In this section, I explain the calculations of my damages analysis. Damages to the FAAs comprise two components. First, the FAAs have suffered damages arising from the supracompetitive fees that AdX charged publishers and advertisers as a whole ("AdX Overcharge"). Second, the FAAs have suffered damages arising from platform fees ("Platform Fees Overcharge"). I can express the FAAs' damages in a simple equation as follows:

Total Damages to FAAs = AdX Overcharge + Platform Fees Overcharge

53.   Below I explain my calculations of the AdX Overcharge and the Platform Fees Overcharge.

1.   Overview of AdX Overcharge

54.   On September 29, 2023, Google produced "invoicing data from January 2019 through June 2023 corresponding to purchases via DV360 and Google Ads associated with the set of [FAA] identification numbers provided by Plaintiffs."[35] These identification numbers were based on information derived from RFP60 Data and other sources. This invoicing data, which I refer to as "RFP76 Data," includes individual line items from invoices. As I discuss later, the RFP76 Data includes "invalid traffic adjustments" and other credits included in invoices but not included in the RFP60 Data.

55.   I have reviewed (1) RFP76 Data and Google's invoices to prime and sub ad agencies, (2) RFP60 Data, (3) contracts and task orders related to the FAAs' purchases, (4) prime ad agency invoices to FAAs and sub ad agency invoices to prime ad agencies, and (5) invoicing and payment data from FAAs and ad agencies. The last category includes information about invoices from prime ad agencies to FAAs as well as invoices from sub ad agencies to prime ad agencies.

56.   For each FAA Purchase Pathway except CMS.1, CMS.2, NHTSA.1, and NHTSA.2, I selected a number of transactions of open web display advertising and confirmed that the FAA paid for those transactions. I reviewed documents and data showing how amounts that Google invoiced the ad agencies were included in the amounts on ad agencies' invoices to the FAAs. I find that this information supports the conclusion that the FAAs' payments for display ads were

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[35]   DV360 data is in GOOG-AT-EDVA-DATA-000226020. Google Ads Data is in GOOG-AT-EDVA-DATA-000226019. *See* Letter from David Pearl to Kelly D. Garcia, September 29, 2023. I refer to this data collectively as "RFP76 Data."

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consistent with information reflected in Google's RFP76 Data and/or RFP60 Data, and I have not seen evidence that would lead me to conclude otherwise. In **Appendix E,** for each FAA, I provide an example of a Google invoice that I walked through to the FAA's payment. In addition, I provide a list of additional Google invoices that I also walked through.[36] For CMS.1, CMS.2, NHTSA.1, and NHTSA.2, I have included these pathways based on instruction from the United States.

57.   The ad agencies charged the FAAs fees for their services separate and apart from amounts charged by Google (and other advertising vendors). I do not include these fees in the payments to Google on which I base my damages analysis.

58.   Monies that flowed from advertisers to AdX less the monies that AdX paid to publishers equal the amount retained by AdX ("AdX Actual Take").[37] But for Google's allegedly anticompetitive conduct, AdX would have retained a smaller amount ("AdX But-For Take"). The excess of the AdX Actual Take over the AdX But-For Take equals the AdX Overcharge borne by both publishers and advertisers. I can express my calculation of the AdX Overcharge in the following formula:

> AdX Overcharge = AdX Actual Take – AdX But-For Take

59.   In addition, I consider what Google calls "invalid traffic adjustments" and other credits included in invoices, as indicated in the RFP76 Data, which are not included in the RFP60 Data.[38] Invalid traffic are impressions for which Google offers a refund to the advertiser due to, *e.g.,* fraudulent clicks. Fraudulent clicks might come from a so-called "click farm" in which computers simulate the viewing of websites when in fact no human eyeballs viewed the web content. Amounts that Google refunds to its advertisers should not be included in the damages calculations and I therefore remove them. I performed an analysis of RFP76 Data provided by Google for each FAA

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[36]   In the text and figures in the body of this report, when describing a pathway, I start with the names of the FAAs and finish with the DSP or Google Ads. In **Appendix E**, I reverse this order, *i.e.,* I start each pathway with Google and finish with an FAA so as to link a Google's invoice to the FAA's payment.

[37]   The term "take" refers to the dollar amount taken by AdX. The term "take rate" refers to the amount, on a percentage basis, that AdX "takes" from the amount spent by an advertiser—for example, if AdX has a take rate of 20 percent, that means that for every $100 that flowed to AdX, AdX "takes" $20 of it as its fee for brokering a deal between the buyer (advertiser) and seller (publisher).

[38]   These credits include things like invalid traffic, explained here, overages, and other types of adjustments.

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and determined that Google's invoices had, on average, invalid traffic adjustments of less than one percent of advertising spend during the Damages Period.[39] I therefore conservatively apply a one percent haircut to my calculation of the AdX Overcharge. The formula therefore becomes:

> AdX Overcharge =
>
> (AdX Actual Take – AdX But-for Take) x (1 – Invalid Traffic Percent)

This is equal to:

> AdX Overcharge = (AdX Actual Take – AdX But-for Take) x 99%

60.   Using RFP60 Data, I calculate the AdX Actual Take on FAA Purchase Pathways included in my damages analysis by determining amounts that flowed to AdX ("AdX Revenues") and subtracting amounts that flowed from AdX to publishers. (The latter is referred to as *traffic acquisition costs*—"TAC"—which I discuss in more detail later in this report.) I understand that Dr. Simcoe has estimated the take rate that AdX would have retained but for its alleged anticompetitive conduct ("AdX But-For Take Rate").[40] In the alternative, the United States has

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[39]   The amounts in RFP60 exclude adjustments for invalid traffic and other adjustments ("Refunds and Adjustments") that affect the amounts of Google invoices. I verified this by comparing the amounts included in the RFP76 DV360 data for the included pathways, filtering out any items that appeared to be invalid traffic, overages, and other adjustments (the "excluded DV360 items") to the monthly revenue amounts in the RFP60 DV360 data. I noted that after filtering out the excluded DV360 items, there was an approximately $60,000 difference between the two over the course of the damages period. Most of this difference is due to two months of CMS charges where there was no corresponding invoice in RFP76 DV360 data (representing $59,440 in spend). After adjusting for these two months, the remaining difference between RFP60 and RFP 76 was $549.

For DV360, I divided the sum of the excluded DV360 items for the pathways included in my damages calculations by the total amount in RFP76 Data plus the excluded DV360 items. The resulting percentage was 0.32 percent, which is less than 1 percent.

For Google Ads, I cannot calculate the difference between RFP60 Data and RFP76 Data because the advertising spend amounts in RFP76 Data are greater than the amounts in RFP60 Data, and I have not been able to determine the source of the difference. For example, while Google includes "ProfitCenter" data in RFP76 Data, including/excluding selected profit centers does not explain the difference. Therefore, I calculated the "haircut" in this instance by diving the sum of all of the credits in the RFP76 data by the total amount in RFP76 plus the absolute value of the credits. This approach is conservative because it does not adjust for any potential offsets to the credits in the data. Again, this amount, 0.73 percent, is less than the 1 percent haircut that I used in my damages calculation.

[40]   Simcoe Report, Figure 22.

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asked me to assume an additional possible AdX But-For Take Rate of 10 percent.[41] I calculate the dollar amount of the AdX But-For Take using AdX But-For Take Rates estimated by Dr. Simcoe, or the 10 percent rate as requested by the United States.[42] I do this by multiplying AdX Revenues by the AdX But-For Take Rate as follows:

AdX But-For Take = AdX Revenues x AdX But-For Take Rate

61.   Finally, I rely on Dr. Simcoe's estimate of the percentage of the AdX Overcharge borne by advertisers ("Advertiser Share") as opposed to publishers, which is 19.3 percent.[43] I calculate the AdX Overcharge to the FAAs as follows:

AdX Overcharge to FAAs = AdX Overcharge x 19.3%

62.   I first calculate (i) the AdX Overcharge to advertisers and publishers worldwide, (ii) the AdX Overcharge to advertisers and publishers in the U.S., and (iii) the AdX Overcharge to U.S. Government agencies and the publishers on which their advertisements were displayed. I then calculate (iv) the AdX Overcharge to the FAAs specifically. The latter equals the first category of damages to the FAAs.

2.   Overview of Platform Fees Overcharge

63.   DSPs and Google Ads charge what are called platform fees based on the amounts of an advertiser's spend that flows into AdX.[44] As a result of the alleged AdX Overcharge, the FAAs

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[41]   As instructed by the United States, in **Appendix D**, I have calculated the damages that would be owed by Google for a range of AdX But-For Take Rate percentages.

[42]   My damages estimates are conservative because I do not reduce Dr. Simcoe's AdX But-For Take Rates nor the 10 percent rate requested by the United States by any discounts that publishers may have been negotiated relative to those rates. That is, further discounts from these rates are not included in my damages calculations.

[43]   Simcoe Report, Figure 21, column [E], middle value. This amount captures only the direct effect from Dr. Simcoe's model and excludes indirect (equilibrium) effects of a change in the AdX take rate. Therefore, my damages calculations are conservative.

[44]   The RFP60 Data for DV360 supports this statement—the ratio of Platform Fee to Media Cost for each FAA pathway is fixed over time, with occasional breaks in the trend whereby, for example, the ratio is steady for a number of months and then shifts to a different ratio and is steady at that ratio thereafter. As discussed below, Google Ads has a consistent platform take embedded in its fee structure. "Metrics in reports," Display & Video 360 Help, accessed December 19, 2023, https://support.google.com/displayvideo/table/3187025?hl=en&sjid=483119302597141525 7-NA ("Platform Fee… The fees for using Display & Video 360").

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also paid more in platform fees to DSPs (DV360 and TTD) and Google Ads. The amount by which platform fees to the FAAs increased as a result of Google's alleged anticompetitive conduct also constitutes damages because the FAAs would not have paid the portions of the fees that constitute damages but for Google's allegedly anticompetitive conduct. That is, as the fees were based on the amount charged by AdX, reducing the AdX fee necessarily and mechanically reduces the platform fees in the but-for world.

B.   CALCULATIONS OF ADX OVERCHARGES

1.   Calculation of AdX Actual Take for DV360, Google Ads, and TTD

64.   __DV360__. There are four revenue variables in the RFP60 Data for DV360: Gross Revenue, Media Cost, Platform Fees, and Other Fees.[45] Gross Revenue is the sum of the other three variables. Because Dr. Simcoe's AdX But-For Take Rate relates to AdX, I am interested in those advertising dollars that were paid by the FAAs and flowed to AdX. I understand Platform Fees and Other Fees do not flow to AdX.[46] I understand that the amounts of Media Cost flow to AdX,[47] so those amounts are AdX Revenues. I thus start with Media Cost and subtract amounts that AdX paid to publishers, which Google refers to as *traffic acquisition costs* ("TAC") or *revenue share.* The latter amounts are AdX's costs. The difference between AdX Revenues (Media Cost) and AdX's TAC (AdX's costs) equals the AdX Actual Take for DV360.

65.   __Google Ads__. The RFP60 Data for Google Ads does not split revenues into Media Cost, Platform Fees, and Other fees the way it does for DV360. Instead, a single variable (similar to Gross Revenues for DV360) captures total revenues. I then rely on information from Google which tells me the fraction of advertiser spend on Google Ads that goes to AdX and the fraction that is assigned to Google Ads as a platform fee. Specifically, as shown in **Figure 12** below, for every $1

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[45]   Gross revenue is named "revenue_usd" in the source data.

[46]   "Metrics in reports," Display & Video 360 Help, accessed December 19, 2023, https://support.google.com/displayvideo/table/3187025?hl=en&sjid=4831193025971415257-NA ("Platform Fee… The fees for using Display & Video 360").
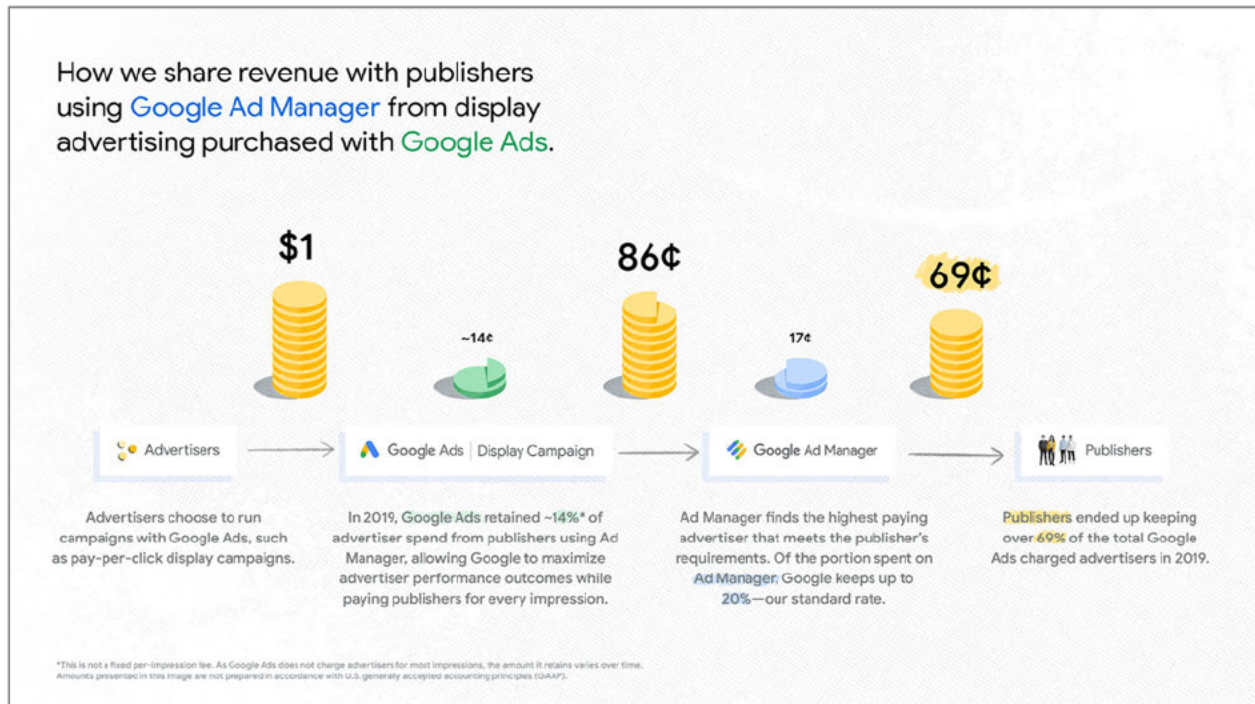
Google's DV360 invoices include "Data Fees" which match "Other Fees" in RFP60 Data. Data Fees are third-party fees charged by Google and passed on to advertisers. ("The fees for using third-party audience segment data, based on the third-party audience lists targeted by your line items").

[47]   "Metrics in reports," Display & Video 360 Help, accessed December 19, 2023, https://support.google.com/displayvideo/table/3187025?hl=en&sjid=4831193025971415257-NA ("Media cost is the raw cost for impressions purchased from an exchange.").

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spent by an advertiser, Google Ads retains an average of approximately $0.14 as a platform fee and the remaining $0.86 flows to AdX (which is a component of Google Ad Manager[48]).[49] That is, AdX Revenues are $0.86. **Figure 12** also tells me that AdX retains approximately $0.17 of the $0.86, and the remaining $0.69 flows to publishers. Therefore, I subtract $0.83 (= $0.14 + $0.69) from every dollar of Google Ads revenues to arrive at an estimate of the AdX Actual Take for Google Ads transactions.

Figure 12: Google Ads Revenue Share (Excerpt from Google Website)

How we share revenue with publishers using Google Ad Manager from display advertising purchased with Google Ads.

| $1 | ~14¢ | 86¢ | 17¢ | 69¢ |

| Advertisers | Google Ads \| Display Campaign | Google Ad Manager | Publishers |

Advertisers choose to run campaigns with Google Ads, such as pay-per-click display campaigns.

In 2019, Google Ads retained ~14%* of advertiser spend from publishers using Ad Manager, allowing Google to maximize advertiser performance outcomes while paying publishers for every impression.

Ad Manager finds the highest paying advertiser that meets the publisher's requirements. Of the portion spent on Ad Manager, Google keeps up to 20%—our standard rate.

Publishers ended up keeping over 69% of the total Google Ads charged advertisers in 2019.

*This is not a fixed per-impression fee. As Google Ads does not charge advertisers for most impressions, the amount it retains varies over time. Amounts presented in this image are not prepared in accordance with U.S. generally accepted accounting principles (GAAP).

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[48] Google Ad Manager is the result of Google merging AdX and DoubleClick for Publishers ("DFP"). Sridhar Ramaswamy, "Introducing simpler brands and solutions for advertisers and publishers," Google, June 27, 2018, https://blog.google/technology/ads/new-advertising-brands/ ("[F]or the last three years, we've been working to bring together DoubleClick for Publishers and DoubleClick Ad Exchange in a complete and unified programmatic platform under a new name–Google Ad Manager.").

[49] Sissie Hsiao, "How our display buying platforms share revenue with publishers," Google Ad Manager Blog, June 23, 2020, accessed December 13, 2023, https://blog.google/products/admanager/display-buying-share-revenue-publishers/. *See also,* GOOG-DOJ-12114691, at -692 (01/2018); GOOG-DOJ-03156193, at -193 (10/01/2019); GOOG-DOJ-09715248 at -265 (09/24/2019). These documents show "waffle charts" with the Google Ads fee for AdX at 15%. I chose to rely on the Google Ad Manager Blog because it was publicly available and therefore likely to have been scrutinized by Google prior to being published.

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> *Source:* Sissie Hsiao, "How our display buy platforms share revenue with
> publishers,"Google Ad Manager, June 23, 2020,
> https://blog.google/products/admanager/display-buying-share-revenue-publishers/.

66.   **TTD**. TTD data present one variable, *PartnerCost_USD*. Like total revenues in the RFP60
Data for Google Ads, *PartnerCost_USD* captures spend that TTD retains as well as the portion
sent on to AdX or another inventory source. To estimate the portion of *PartnerCost_USD* that goes
to AdX, I analyzed a sample of TTD invoices to FAAs and determined that, on average, 59.1
percent is equivalent to Media Cost ("TTD AdX Revenue") and the remainder is retained by
TTD.[50] I lack the data to estimate the AdX Actual Take for TTD transactions, so I assume that the
AdX Actual Take on TTD AdX Revenue is the same fraction as the AdX Actual Take of AdX
Revenues on FAA Purchase Pathways through DV360.[51]

67.   **Figure 13** shows the AdX Actual Take on transactions for worldwide advertisers, U.S.
advertisers, and all U.S. government agencies through DV360 and Google Ads (broken out by the
industry sector in which the advertisers operate[52]) during the Damages Period. **Figure 14** shows
AdX Actual Take for FAAs and other U.S. government agencies. (Other U.S. government agencies
include non-FAA Department of Defense agencies, such as the Marines and the Coast Guard, and
other government agencies such as the Central Intelligence Agency, National Park Service, and
Internal Revenue Service.) **Figure 13** and **Figure 14** include only the AdX Actual Take for
transactions through DV360 and Google Ads. (TTD and other 3P DSPs did not produce non-FAA
buying information regarding their worldwide, United States, and other U.S. government agency
transactions.)

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[50]   The Trade Desk invoices are divided into Media Cost, Data Cost, Feature Cost, and TTD
Fee. I describe my sampling methodology and the invoices included in my sample in
Appendix C.

[51]   The AdX Take Rate is assumed to be the sum of AdX Actual Take over the sum of Media
Cost for in scope purchases through DV360. Google Ads was not included in the estimation
of the AdX Take Rate for TTD transactions as no exact AdX Actual Take was available in
the data.

[52]   This category is reflected in the field *Advertiser_Type*.

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Figure 14: AdX Actual Take through DV360 and Google Ads
Subject to the Respess Product Market Filters
for FAAs and Other U.S. Government Agencies
January 25, 2019 – January 24, 2023

Advertiser	AdX Revenues [A]	AdX Actual Take [B]
Air Force	$ 4,816,349	$ 878,599
Army	18,746,690	3,585,395
Census	1,482,817	282,615
CMS	11,423,454	2,039,261
Navy	249,275	41,580
NHTSA	1,604,866	291,695
USPS	10,733,722	1,985,818
VA	5,383,408	1,004,198
Other	16,798,714	3,193,996
Total	**$ 71,239,296**	**$ 13,303,158**

Sources: Google Ads Monthly and DV360 XBridge Monthly Data. Product market filters have been applied as in **Figure 5**.

2. Overcharge to Worldwide, U.S., and All U.S. Government Agency Advertisers and Publishers

68.   Dr. Simcoe has constructed scenarios in which he estimates the AdX But-For Take Rate absent Google's anticompetitive conduct. The United States has asked me to use the following AdX But-For Take Rates from Dr. Simcoe's Figure 22: 16.2 percent or 16.6 percent on amounts flowing into AdX (*e.g.,* AdX Revenues).[53] In addition, the United States has instructed me to use an alternative AdX But-For Take Rate of 10 percent.

69.   In **Figure 15** below, I show how much AdX overcharged worldwide advertisers and publishers, U.S. advertisers and publishers, and U.S. government agency advertisers (including but not limited to the eight FAAs) and their publishers. I determine the AdX But-For Take by multiplying the AdX Revenues by the AdX But-For Take Rate. I then determine the AdX

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[53]   Simcoe Report, Figure 22, column [D] for estimates relating to all exchanges for both comparables (16.2 percent) and event study (16.2 percent and 16.6 percent). I estimate damages on the remaining but-for take rates from Simcoe Figure 22 in **Appendix D, Figure 38**.

Overcharge by subtracting the AdX But-For Take from the AdX Actual Take. As a reminder, here are the formulas again:

AdX But-For Take = AdX Revenues x AdX But-For Take Rate

AdX Overcharge = (AdX Actual Take – AdX But-for Take) x 99%

**Figure 15: AdX Overcharge to Worldwide, United States,
and United States Government Agency Advertisers and Publishers
January 25, 2019 – January 24, 2023**

			United States Government [C]
AdX Revenues	[1]		$71,239,296
AdX Actual Take	[2]		13,303,158
With 10% AdX But-For Take Rate			
AdX But-For Take	[3] = [1] x 10%		7,123,930
AdX Overcharge	[4] = ([2] - [3]) x 99%		6,117,436
Total Overcharge as a % of But-For Take	[5] = [4]/[3]		*86%*
With 16.2% AdX But-For Take Rate			
AdX But-For Take	[6] = [1] x 16.2%		11,540,766
AdX Overcharge	[7] = ([2] - [6]) x 99%		1,744,768
Total Overcharge as a % of But-For Take	[8] = [7]/[6]		*15%*
With 16.6% AdX But-For Take Rate			
AdX But-For Take	[9] = [1] x 16.6%		11,825,723
AdX Overcharge	[10] = ([2] - [9]) x 99%		1,462,660
Total Overcharge as a % of But-For Take	[11] = [10]/[9]		*12%*

Sources: Rows [1] and [2]: columns [A] and [B], **Figure 13;** column [C]**, Figure 14.**

Note: 99 percent represents the reduction for invalid traffic, which I conservatively estimate at 1 percent of media cost.

70.   I calculate that AdX overcharged worldwide advertisers and publishers an amount ranging from $483.8 million to $1.7 billion during the Damages Period for transactions through DV360 and Google Ads.

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71.   I similarly calculate that the AdX Overcharge to advertisers based in the United States and their publishers and to U.S. government agencies and their publishers ranges from $208.7 million to $765.3 million and from $1.5 million to $6.1 million, respectively.

C.   DAMAGES TO THE FAAS

1.   AdX Overcharge to FAAs

72.   **Figure 16** shows a summary of my calculations of AdX Revenues and the AdX Actual Take for each of the FAA Purchase Pathways included in my damages analysis. I also include the amounts of platform fees Google retained for each FAA Purchase Pathway.

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Figure 16: AdX Revenues and AdX Actual Take for FAA Pathways
January 25, 2019 – January 24, 2023

Reference Name	Short Name	AdX Revenues	AdX Actual Take	Platform Fee
		[A]	[B]	[C]
Census				
Census.1	Census | Y&R | JR Reingold | DV360	50,038	9,749	4,246
Census.2	Census | Y&R | TDW | DV360	339,342	66,577	28,842
Census.3	Census | Y&R | C1W | DV360	690,405	134,425	58,684
Total - Census		**1,079,785**	**210,750**	**91,772**
CMS				
CMS.1	CMS | Weber Shandwick | DV360	1,347,955	233,809	114,576
CMS.2	CMS | Weber Shandwick | Google Ads	7,130,772	1,266,622	1,160,823
Total - CMS		**8,478,727**	**1,500,431**	**1,275,399**
Navy				
Navy.1	Navy | Y&R | Wavemaker | Google Ads	237,307	39,856	38,631
Navy.2	Navy | Group M | TTD	491,164	91,669	-
Total - Navy		**728,470**	**131,525**	**38,631**
NHTSA				
NHTSA.1	NHTSA | Stratacomm | GMMB | DV360	893,594	168,145	76,265
NHTSA.2	NHTSA | Stratacomm | GMMB | Google Ads	695,013	120,272	113,142
Total - NHTSA		**1,588,607**	**288,417**	**189,407**
US Air Force				
Air Force.1	Air Force | GSD&M | DV360	4,758,948	865,290	400,869
Total - US Air Force		**4,758,948**	**865,290**	**400,869**
US Army				
Army.1	Army | DDB | OMD | DV360	13,935,407	2,642,574	1,163,738
Total - US Army		**13,935,407**	**2,642,574**	**1,163,738**
USPS				
USPS.1	USPS | Universal McCann | Matterkind | DV360	6,734,684	1,251,672	572,447
USPS.2	USPS | Universal McCann (IPG) | Matterkind | TTD	41,567	7,758	-
Total - USPS		**6,776,251**	**1,259,430**	**572,447**
VA				
VA.1	VA | DCG | JR Reingold | DV360	2,385,501	449,673	305,059
VA.2	VA | JR Reingold | DV360	2,057,734	372,907	242,596
Total - VA		**4,443,235**	**822,580**	**547,655**
Total		**$ 41,789,429**	**$ 7,720,993**	**$ 4,279,919**

Sources: Google Ads Monthly Data, DV360 XBridge Monthly Data, XP Daily Monthly Data, DV360 Monthly Data, Respess Report, 'VA Damages Split' Workpaper, TTD_DOJ-GOOG23-0012987, and TTD_DOJ-GOOG23-0033644.

Notes: For USPS pathways, [A], [B], and [C] only include amounts from January 2021 onward. For VA.1 and VA.2, I apportioned the spending by campaign information available in the RFP60 and RFP76 Data. Trade Desk Actual Take [B] is calculated by [A] x the average DV360 Actual Take Rate (Total of [B]/ Total of [A] for DV360).

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73.   In **Figure 17** below, I show how much AdX overcharged the FAAs. I determine the AdX But-For Take by multiplying AdX Revenues by the AdX But-For Take Rate. I then determine the AdX Overcharge by subtracting the AdX But-For Take from the AdX Actual Take. As a reminder, here are the formulas again:

AdX But-For Take = AdX Revenues x AdX But-For Take Rate

AdX Overcharge = (AdX Actual Take – AdX But-for Take) x 99%

74.   As discussed above, the AdX Overcharge was borne by both advertisers and publishers. I understand that Dr. Simcoe estimates that advertisers bore 19.3 percent of the AdX Overcharge. Therefore, I do an additional calculation where I multiply the AdX Overcharge by the Advertiser Share to compute the fraction of the AdX Overcharge borne by the FAA advertisers to arrive at the AdX Overcharge to FAAs:

AdX Overcharge to FAAs = AdX Overcharge x 19.3%

75.   **Figure 17** shows a summary of total damages for all FAAs. **Figure 17** shows that AdX overcharged the FAAs a total of $0.7 million assuming a 10 percent AdX But-For Take Rate, $0.2 million assuming a 16.2 percent AdX But-For Take Rate, and $0.1 million assuming a 16.6 percent AdX But-For Take Rate. **Appendix D** shows damages amounts for each FAA. **Appendix D** also shows how damages change with different but-for take rates and Advertiser Shares. In the alternative, I also computed damages of $0.3 million by applying the 22.2 percent overcharge estimated by Dr. Simcoe (in the scenario in which he estimates a 16.2 percent AdX But-For Take Rate)[54] to the AdX Actual Take in **Figure 17**.[55] In the next section of this report, I calculate additional damages stemming from increased platform fees resulting from the AdX Overcharge.

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[54]   22.2% overcharge = (19.8% - 16.2%) / 16.2%. Alternatively, one can envision the reduction in actual take rate as (19.8% - 16.2%) / 19.8% = 18.2% reduction in actual take rate. *See* Simcoe Report, Figure 22: 19.8% is the AdX as-is take rate, 16.2% is the but-for take rate associated with all exchanges in Professor Simcoe's model.

[55]   I calculated the AdX Overcharge to FAAs as follows: AdX revenues of $41,789,729 and AdX actual take of $7,720,993. Calculate but-for take by multiplying AdX actual take by (1 - 18.2% reduction in actual take rate) = $7,720,993 x (1 – 18.2%) = $6,135,772. Calculate AdX Overcharge by subtracting AdX But-For Take from AdX Actual Take, multiplied by 99% to account for invalid traffic = ($7,720,993 - $6,135,772) x 99% = $1,391,168. Calculate AdX Overcharge to FAAs by multiplying AdX Overcharge by 19.3% (Advertiser Share from Simcoe Figure 21) = $1,391,168 x 19.3% = $268,496. Additionally, it is possible to calculate Platform Fees Overcharge in the same manner as I do in **Section VII.C.2**.

Figure 17: Summary of AdX Overcharge for FAA Purchase Pathways
January 25, 2019 – January 24, 2023

			10.0%	16.2%	16.6%
AdX Revenues	[1]	$ 41,789,429			
AdX Actual Take	[2]	7,720,993			
But-For Take Rate			**10.0%**	**16.2%**	**16.6%**
AdX But-For Take	[3] = [1] x BFTR		4,178,943	6,769,888	6,937,045
AdX Overcharge	[4] = ([2] - [3]) x 99%		3,506,629	941,594	776,108
AdX Overcharge to FAAs	[5] = [4] x 19.3%		676,779	181,728	149,789
Total Overcharge as a % of But-For Take	[6] = [4] / [3]		*84%*	*14%*	*11%*

Sources: [1]: **Figure 16**, column [A]. [2]: **Figure 16**, column [B]. *Note*: USPS pathways only include amounts from January 2021 onward.

2.   Platform Fees Overcharge Resulting from AdX Overcharge

76.   As a result of Google's alleged anticompetitive conduct, advertisers also paid more in platform fees to DSPs (DV360 and TTD) and Google Ads ("Platform Fees Overcharge"). This is because DSPs and Google Ads charged platform fees based on a percentage of the amounts of AdX Revenues. If AdX Revenues had been lower, then platform fees would also have been lower.

77.   In **Figure 18**, I compute the Platform Fees Overcharge to the FAAs during the Damages Period for transactions through DV360 and Google Ads. (Because of data constraints in TTD Data,[56] I do not calculate a Platform Fee Overcharge for the FAAs' transactions through TTD.) For each scenario of an AdX But-For Take Rate, I show the AdX Overcharge to FAAs. Assuming that the actual percentage of platform fees as a fraction of AdX Revenues would have remained constant absent the AdX Overcharge,[57] I multiply this percentage by the AdX Overcharge to the FAAs to arrive at the amount by which platform fees increased due to the AdX Overcharge. This increase is the Platform Fees Overcharge to the FAAs.

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[56]   TTD Data does not break out TTD's platform fees.

[57]   I understand that DSPs/ad networks and ad exchanges are separate markets. Complaint, ¶ 279 ("Google's conduct at issue in this Complaint implicates three relevant antitrust markets in the United States: publisher ad servers, ad exchanges, and advertiser ad networks.").

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Figure 18: Summary of Platform Fees Overcharge for FAA Purchase Pathways
DV360 and Google Ads
January 25, 2019 – January 24, 2023

AdX Revenues	[1]	$	41,256,699		
Platform Fee	[2]		4,279,919		
But-For Take Rate			10.0%	16.2%	16.6%
AdX Overcharge to FAAs	[3]		667,962	179,221	147,689
Platform Fee Overcharge	[4]		68,373	17,672	14,401

Sources:

[1]: **Figure 16**, column [A].

[2]: **Figure 16**, column [C].

[3]: **Appendix D, Figure 36**: [5], [8], [11] respectively. **Figure 36** is a reprise of **Figure 17** but excluding TTD-related damages.

[4]: **Appendix D, Figure 37**: [5], [7], [9] respectively.

Notes: This analysis only calculates the Platform Fees Overcharge for spend through DV360 and Google Ads. USPS pathways include amounts only from January 2021 onward.

3.   Summary of Damages to FAAs

78.   **Figure 19** below is a summary of damages to the FAAs. I start with the AdX Overcharge to the FAAs, *i.e.,* Column [A]. I then add Column [B], Platform Fees Overcharge to the FAAs, to arrive at Column [C], Total Damages to the FAAs.

Figure 19: Summary of Damages to FAAs
January 25, 2019 – January 24, 2023

But-For Take Rate	AdX Overcharge to FAAs [A]	Platform Fees Overcharge to FAAs [B]	Total Damages to FAAs [C] = [A] + [B]
10.0%	$676,779	$68,373	$745,152
16.2%	181,728	17,672	199,399
16.6%	149,789	14,401	164,189

Sources: [A]: **Figure 17**, row [5]. [B]: **Figure 18**, row [4]. *Note*: USPS pathways only include amounts from January 2021 onward.

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VIII. Prejudgment Interest

79.   I understand that the court may rule that the United States is entitled to prejudgment interest ("PJI") in this matter, which is "simple interest on actual damages for the period beginning on the date of service of the pleading… and ending on the date of judgment[.]"[58] The United States has instructed me to calculate prejudgment interest using the weekly average 1-year constant maturity Treasury yield as published by the Board of Governors of the Federal Reserve System.

80.   I calculate prejudgment interest from January 24, 2023 (the date of service of the complaint) through June 30, 2024, a hypothetical judgment date. I use actual interest rates available through the date of this report. For the time period between the date of this report and the hypothetical judgment date, I do not have actual interest rates, so I use the last actual interest rate published prior to the date of this report.

81.   In addition to prejudgment interest, I understand that the United States is also entitled to treble damages.[59] **Figure 20** summarizes the results of my calculations for prejudgment interest and treble damages below:

Figure 20: Summary of Damages and Prejudgment Interest

But-For Take Rate [A]	AdX Overcharge [B]	Platform Fees Overcharge [C]	Total Damages [D] = [B] + [C]	Prejudgment Interest (PJI) [E]	Treble Damages [F] = [D] x 3	PJI + Treble Damages [G] = [E] + [F]
10.0%	$ 676,779	$ 68,373	$ 745,152	$ 54,293	$ 2,235,457	$ 2,289,751
16.2%	181,728	17,672	199,399	14,529	598,198	612,727
16.6%	149,789	14,401	164,189	11,963	492,568	504,531

Sources: Federal Reserve H.15 Selected Interest Rates, accessed December 15, 2023.

[A] – [D]: See **Figure 19**.

Note: Prejudgment interest is based on total damages for the period, not treble damages.

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[58]   15 U.S.C. § 15a.

[59]   *Id.* ("Whenever the United States is hereafter injured in its business or property by reason of anything forbidden in the antitrust laws it may sue therefor in the United States district court for the district in which the defendant resides or is found or has an agent, without respect to the amount in controversy, and shall recover threefold the damages by it sustained and the cost of suit.").

IX. Profitability Analysis

82.   In this section, I discuss how Google compiles profitability analyses of its ad tech businesses in the ordinary course of business. Based on Google's own analyses, I then construct profitability analyses that show estimates of the profitability of portions of Google's ad tech stack.

A.   GOOGLE COMPILES DVAA PRODUCT AREA P&LS AND PRODUCT-LEVEL P&LS IN THE ORDINARY COURSE OF BUSINESS

83.   Externally, Alphabet, Inc. presents its financials in three reporting segments: Other Bets (which includes all its moonshot initiatives), Cloud (which includes its cloud business), and Google Services (which includes all other businesses such as Google's advertising, hardware, platforms, and other businesses).[60] Each of Alphabet, Inc.'s internal segments (discussed next) rolls up into one of these three external reporting segments.[61]

84.   Internally, Alphabet, Inc. and specifically Google Services organizes itself into segments and sub-segments for management financial reporting / decision-making purposes.[62] At the highest level are Product Areas ("PA"), followed by Product Group Sets ("PGS"), Product Groups ("PG"), and finally Profit Centers ("PC").[63] Google creates profit and loss statements ("P&Ls") at the PA level as well as for certain individual products.

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[60]   Alphabet Inc. 2022 10-K, at p. 82 ("We report our segment results as Google Services, Google Cloud, and Other Bets . . . Google Services includes products and services such as ads, Android, Chrome, hardware, Google Maps, Google Play, Search, and YouTube . . . Google Cloud includes infrastructure and platform services, collaboration tools, and other services for enterprise customers . . . Other Bets is a combination of multiple operating segments that are not individually material.").

[61]   *See, e.g.*, GOOG-DOJ-29867818, at -823 (01/19/2021), which shows how each PA P&L sums to arrive at Google Services' 2020 operating profit.

[62]   A complex organization requires hierarchy to organize and manage its business activities. In order to do so, many companies organize themselves into segments. A segment can be defined as "any part or activity of an organization about which a manager seeks cost, revenue, or profit data." *See* Garrison Ray, Eric Noreen, and Peter Brewer, *Managerial Accounting* 17th ed. (McGraw Hill, 2021) at p. 250. Internal financial reports are not required to conform with GAAP, though internal and external reporting is often similar.

[63]   Rule 30(b)(6) Deposition of Jessica Mok (Google), November 10, 2023 ("Mok Deposition"), 109:11 – 16 ("Q What's "PA" mean? A Product area. Q And "PGS" below? A I think it stands for product group. Q What about "PG" below that? A Product group.").

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85.   Google Services includes Google's search ads, YouTube, display ads, and other businesses. Google's ad stack falls within what it calls its Display, Video, Apps, and Analytics ("DVAA") Product Area.[64] See **Figure 21** below, which shows some of Google's Product Areas, Product Group Sets, and Product Groups. This internal reporting is not disclosed publicly.

Figure 21: Google Services Management Structure
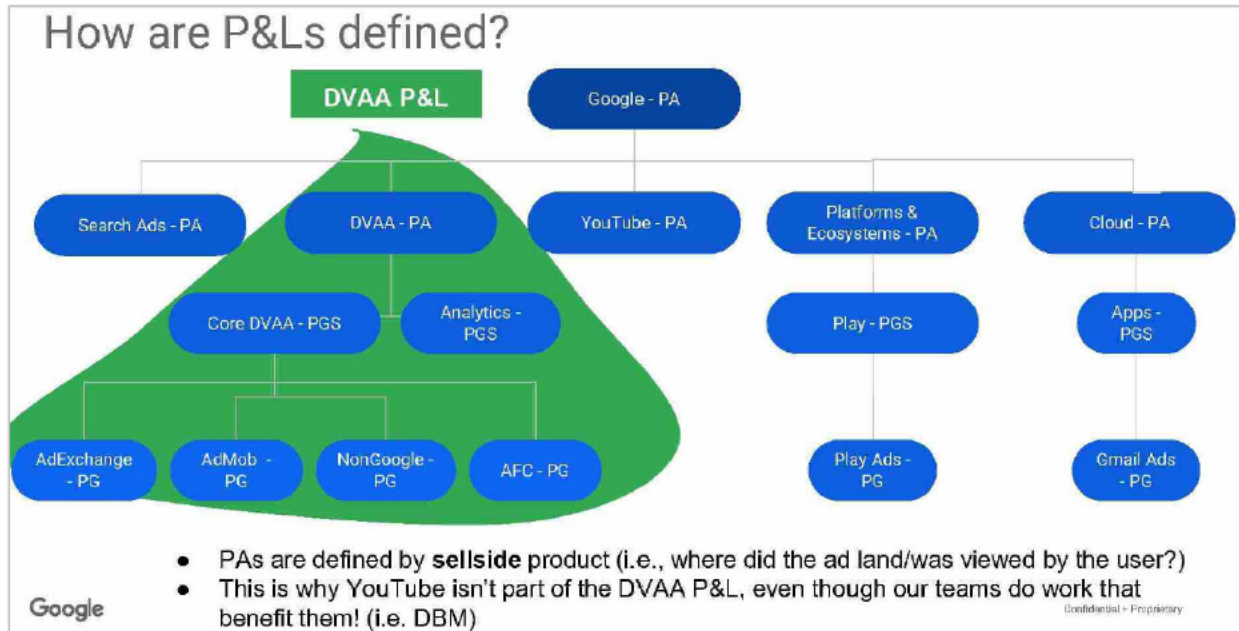
Source: DVAA P&L 101 at -994.

1.   Ordinary Course DVAA Product Area P&L

86.   Companies create and use P&Ls of segments and sub-segments to assess their financial performance in order to make various decisions, such as how to allocate resources and how to award bonuses within and across segments and sub-segments. Google regularly creates P&Ls for its Display, Video, Apps, and Analytics ("DVAA") Product Area in the ordinary course of business.[65] The DVAA P&Ls capture revenues and costs that Google assigns to its ad tech business. Google creates separate P&Ls for revenues and costs that it assigns to its search and

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[64]   GOOG-AT-MDL-004326981, at -989 (08/2018) ("DVAA P&L 101").

[65]   *See, e.g.,* GOOG-DOJ-11919211, "Total Ads Annual" tab, Total Ads category. *See also* Mok Deposition at 47:11 – 21 ("Q So just to make sure I don't -- hold on. You mentioned the display controller earlier. What is the role and responsibility of the display controller? A To ensure that our financials are accounted for accurately and in compliance with accounting requirements. Q And what reports do they prepare -- do they prepare? A At the end of every month, when they're closing the books, they prepare summaries of that month's financials.").

YouTube businesses. Google combines its P&Ls for the DVAA, search (Search PA and Search Ads PA), and YouTube PAs to create a "Total Ads" P&L.[66] **Figure 22** below provides explanations for some accounting terms used in Google's P&Ls:

Figure 22: Accounting Terms

Term	Definition
Booked Revenue	Revenue represents inflows of assets (usually cash or accounts receivable) received in exchange for the delivery of a product or the performance of a service. Booked revenues are Google's gross revenues less contra revenues such as credits, bad debt allowance, and other incentives.[67]
TAC	Traffic Acquisition Cost are "paid to Google Network Members (publishers) for ads displayed on their properties or to third-party ad exchanges for advertising inventory sourced from them."[68]
Net Revenue	Equals Booked Revenue minus TAC. Represents Google's share of each dollar an advertiser pays to place ads on a publisher's website. In other words, it is Google's "cut" of each transaction.[69]
Cost of Sales	Cost of sales (a/k/a cost of revenue and cost of goods sold) are the direct costs required to create one unit of output. In Google's case, beyond TAC, these are various fees, data licenses, server costs, and others.[70]
Gross Profit	Equals revenue minus cost of sales.[71] In Google's case, gross profit equals booked revenue minus TAC and other cost of sales.[72]

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[66]   *Id.*

[67]   *See* DVAA P&L 101 at -996.

[68]   GOOG1-00005951, at -953 (12/31/2019) ("Accounting for Traffic Acquisition Costs (TAC)").

[69]   *See* DVAA P&L 101 at -996.

[70]   *Id. See also,* GOOG1-00005951 at -952 (12/31/2019) ("Cost of Revenues": "Costs that are associated directly with (or allocated to) the products sold or the services rendered by an entity.").

[71]   Jonathan Berk and Peter DeMarzo, *Corporate Finance*, 4th ed. (Pearson, 2016) at p. 63 ("Gross Profit. The first two lines of the income statement list the revenues from sales of products and the costs incurred to make and sell the products. Cost of sales shows costs directly related to producing the goods or services being sold, such as manufacturing costs. . . . The third line is gross profit, which is the difference between sales revenues and the costs.") (emphasis removed).

[72]   *See* DVAA P&L 101 at -996.

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Gross Profit Margin	Equals gross profit divided by revenue.[73]
Operating Costs	Expenses required to run the business—administrative, overhead, sales, marketing, R&D—which cannot be tied directly to the good or service being sold.[74]
Operating Profit	Equals gross profit minus operating costs, and represents the amount of revenues left over after paying direct expenses and operating expenses required to generate those revenues in a given period.[75]
Operating Profit Margin	Equals operating profit divided by revenues.[76]

87.

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[73]   Jonathan Berk and Peter DeMarzo, *Corporate Finance*, 4th ed. (Pearson, 2016) at p. 69 ("The gross margin of a firm is the ratio of gross profit to revenues (sales).") (emphasis removed).

[74]   *Id.* at p. 63 ("Operating Expenses . . . are expenses from the ordinary course of running the business that are not directly related to producing the goods or services being sold. They include administrative expenses and overhead, salaries, marketing costs, and research and development expenses.") (emphasis removed).

[75]   *Id.* at p. 63 ("The firm's gross profit net of operating expenses is called operating income.") (emphasis removed).

[76]   *Id.* at p. 69 ("Because there are additional expenses of operating a business beyond the direct costs of goods sold, *another* important profitability ratio is the operating margin, the ratio of operating income to revenues.") (emphasis removed).

[77]   CAGR for this growth would not provide meaningful context and I therefore exclude it from **Figure 23** (CAGR = (2,479 million / 80 million)^(1/8) – 1 = 54%).

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88.
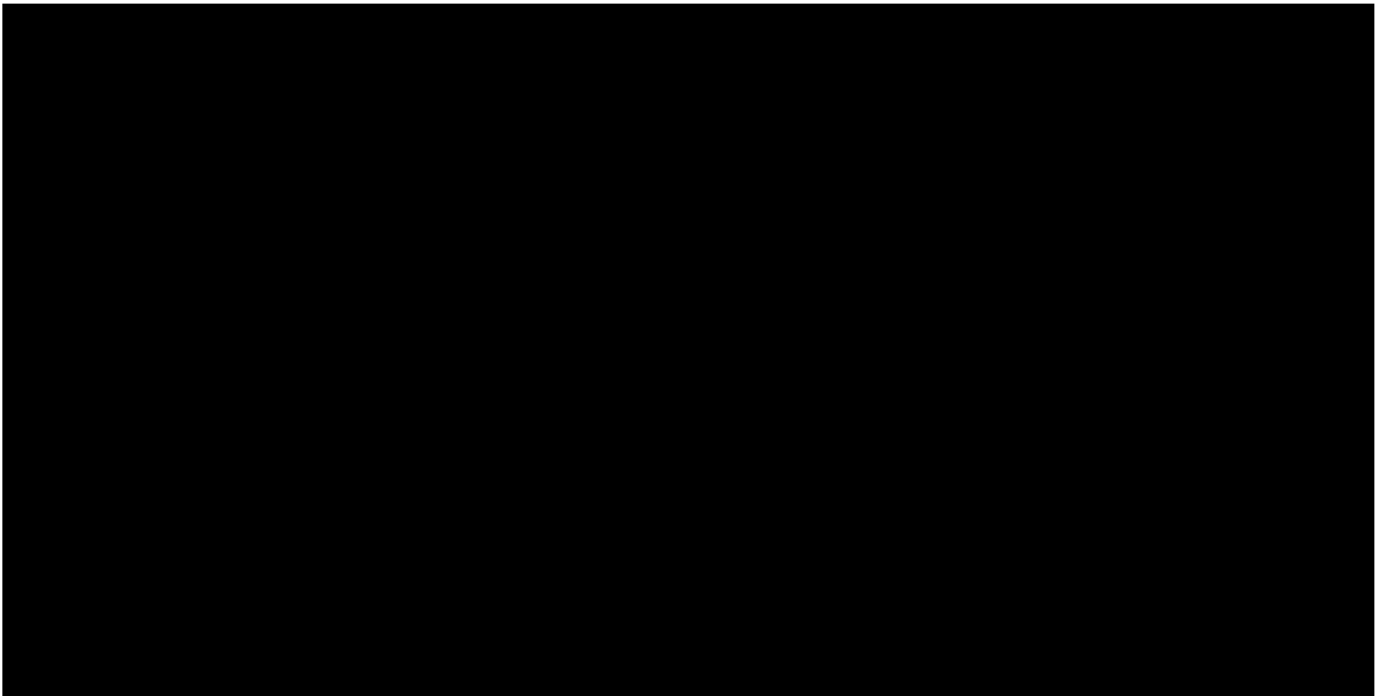
[79] Roman L. Weil, Katherine Schipper, and Jennifer Francis, *Financial Accounting: An Introduction to Concepts, Methods and Uses*, 14th ed. (Cengage Learning, 2012) at p. 752. ("**common-size statement; common-size balance sheet; common-size income statement** A percentage statement usually based on total assets (balance sheet) or net sales or revenues (income statement).") (emphasis in original).

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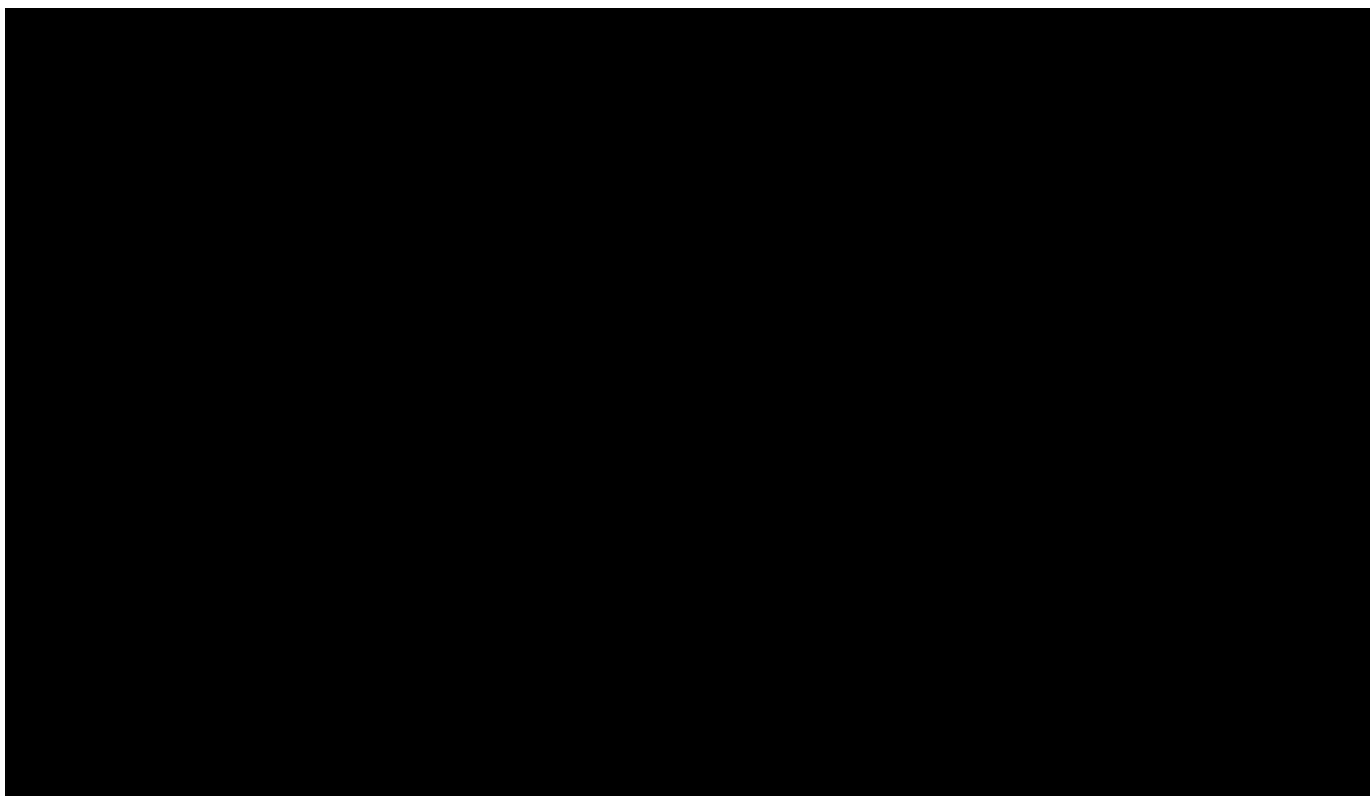
89.

2.   Google Compiles Product-Level P&Ls in the Ordinary Course of Business

#### a.   *Prior to 2021: Buyside and Sellside P&Ls*

90.   Prior to 2021, Google maintained "buyside" and "sellside" P&Ls for its various ad tech products.[80] The buyside P&Ls started with advertiser buyside platforms (such as DV360 and Google Ads) and attributed downstream revenues earned by sellside platforms to whichever buyside product had been involved in the sale. Conversely, for the sellside P&Ls, Google attributed all buyside revenues (from platform fees, for example) from sales that eventually flowed through a particular sellside product such as AdMob and AdSense.

91.   **Figure 25** shows how Google allocated one operating expense line item, Global Business Organization ("GBO") (which includes costs for Google's sales operations, such as salary costs of sales personnel), to the buyside and the sellside in 2021.[81] **Figure 25** shows that the sellside and buyside views have the same total amount of GBO expense, and this would be true for every line item in the P&L.

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[80]   Google states that it began using its MECE view P&L in 2021 and that they recast the 2020 financials, so it is the case that there are buyside/sellside view P&Ls and MECE view P&Ls for 2020. *See* Defendant Google LLC's Supplemental Response to Interrogatory 3 of Plaintiffs' First Set of Interrogatories, at p.4, August 16, 2023 ("In 2021, Google developed and implemented a MECE (mutually exclusive, collectively exhaustive) view for determining the financial metrics for DVAA products, which Google subsequently applied to 2020 product-level data in the ordinary course.").

[81]   Mok Deposition at 73:2-6 ("Q. And what is GBO? A. Global business organization. A. And what does GBO do? A. They sell our products, and they do customer support for our products."). *See also* DVAA P&L 101 at -996.

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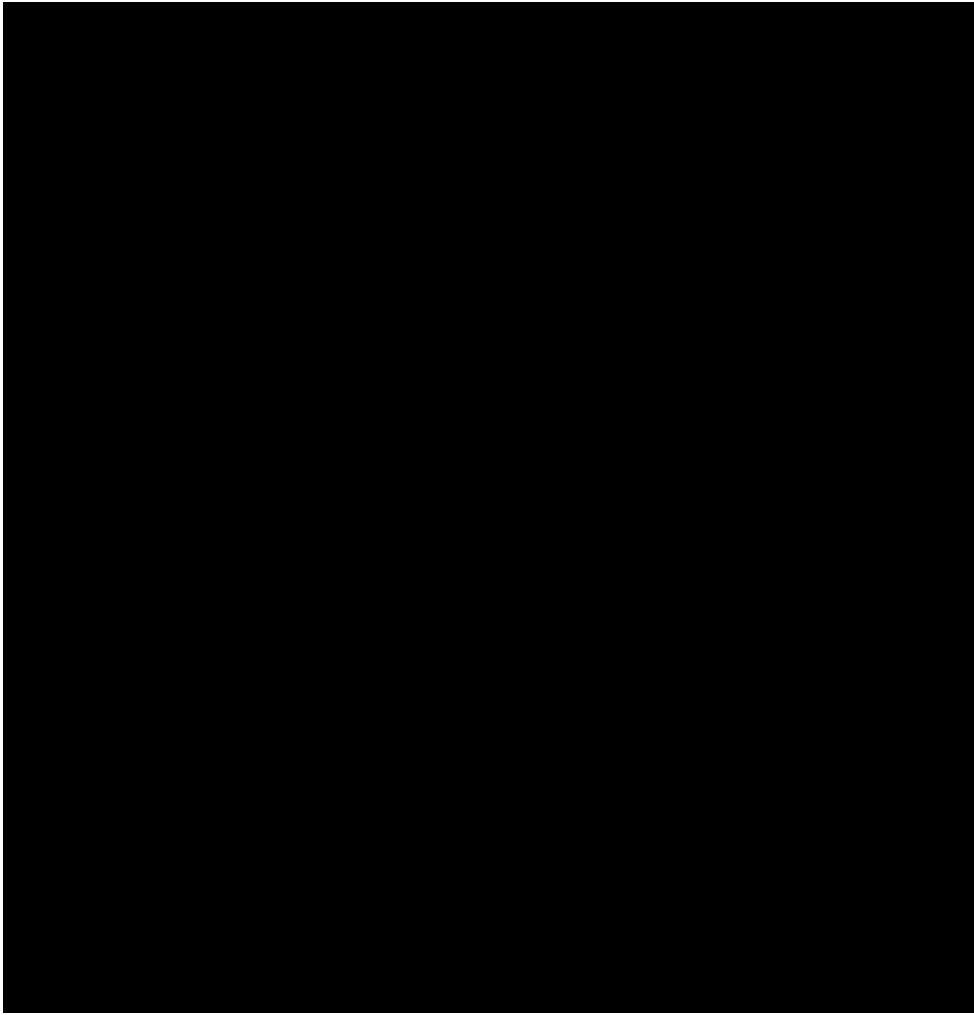
92.   Starting in 2021 (but recast back to 2020), Google began presenting individual ad tech stack product P&Ls in a "mutually exclusive, collectively exhaustive" view ("MECE"). This means that Google allocated revenues and costs to each individual product on its own without any downstream/upstream effects, which was a departure from its buyside/sellside views.[83] The purpose of the MECE view was to analyze each product on a standalone basis. See **Figure 26** below**.** The total in the grey box in **Figure 26** is equal in all three instances.

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[82]   GOOG-AT-MDL-009017857, at -869 (03/09/2023).

[83]   Defendant Google LLC's Supplemental Response to Interrogatory 3 of Plaintiffs' First Set of Interrogatories, August 16, 2023, p. 4. ("In 2021, Google developed and implemented a MECE (mutually exclusive, collectively exhaustive) view for determining the financial metrics for DVAA products, which Google subsequently applied to 2020 product-level data in the ordinary course. A MECE view reflects revenues and costs that are directly attributable to the specific product. Prior to MECE, costs and revenue were allocated to DVAA products based on a buyside or sellside view rather than the specific product.")

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**Figure 26: Shift to Stand-Alone (MECE) Product P&Ls[84]**
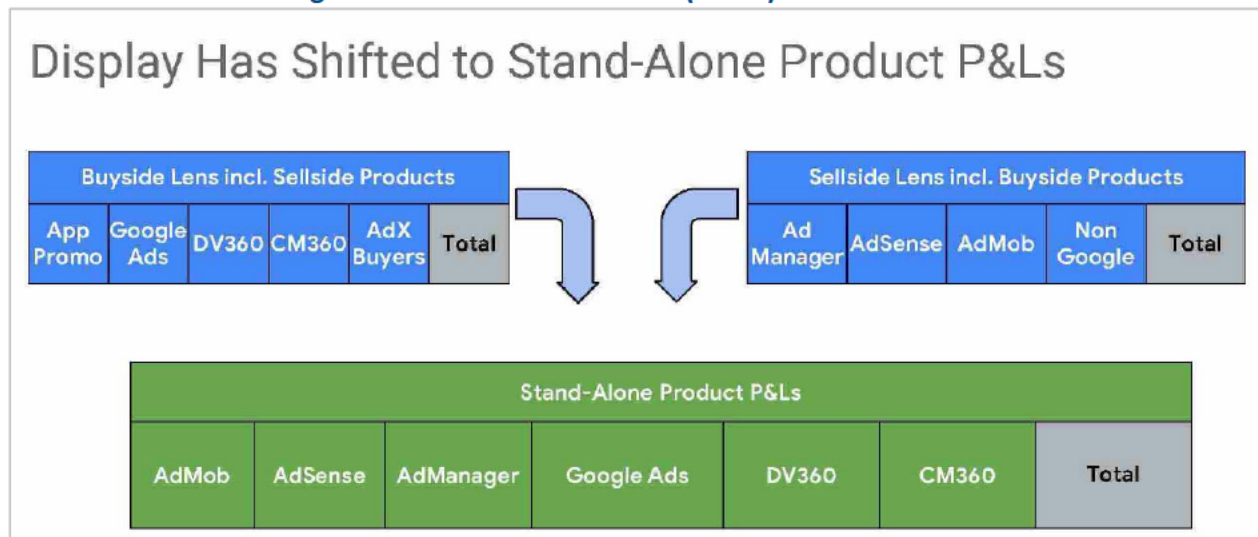
93.   **Figure 27** below shows how Google allocated expenses for GBO in the buyside view, the sellside view, and the MECE view. **Figure 27** shows that because Google allocates costs differently in each of the three types of P&Ls, the three types are not comparable on a side-by-side basis over time.

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[84]   GOOG-AT-MDL-009017857, at -867 (03/09/2023).
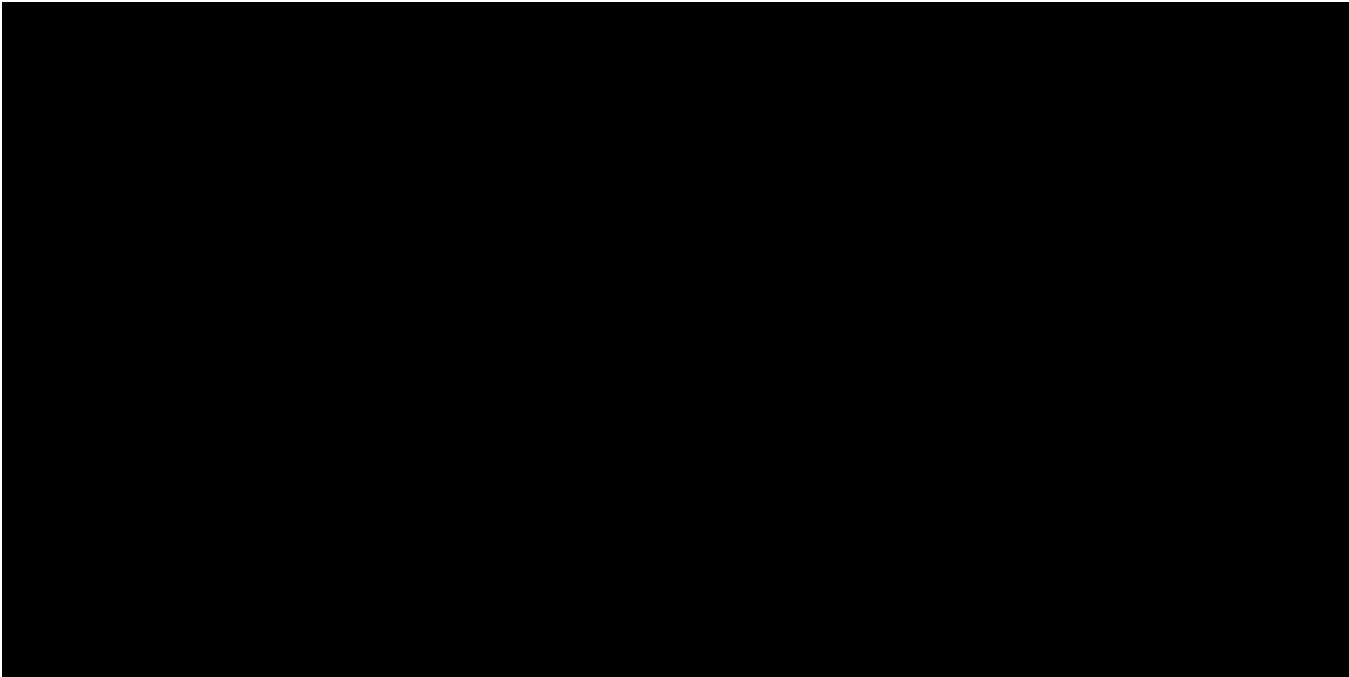
B. MODIFIED DVAA P&L FOR ASSESSING THE PROFITABILITY OF RELEVANT PRODUCT MARKETS

1. Pros and Cons of Google's Various P&L Types

94.   The buyside, sellside, and MECE P&Ls are three different ways of looking at the profits and profitability of products in Google's ad stack. In this section, I briefly discuss how the buyside and sellside view P&Ls offer certain advantages over the MECE view, but they also suffer from certain disadvantages.

95.   On the plus side, the buyside/sellside P&Ls capture synergies with other layers of the ad stack—synergies that Google itself discusses in internal documents and appears to believe are integral to the success of its display ads business. For example, one document states, "It's worth noting that our sell-side pricing model is intertwined with our DBM [DV360] business, because DBM has pursued a hard-bundled low-free strategy, which has helped it grow gross revenue quickly, but which has meant that its profitability depends on maintaining the ███████████ ████████."[86] The same document also notes that "the raw financial value of offering a platform needs to be measured in terms of lift and added value over a hypothetical Buyside only offering. While a conclusive study to measure this precisely is very difficult to do,…we do have a lot of evidence

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[85]   GOOG-AT-MDL-009017857, at -869 (03/09/2023).

[86]   GOOG-DOJ-04004392, at -397 (09/10/2018).

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of value this has added for us over the years."[87] The document further states, "We get significant margin advantages when our buyside buys on our publisher systems vs. outside (e.g., DBM on AdX is ████████████ vs. ████████ in Non-Google inventory)."[88] These quotes suggest that looking at individual product P&Ls in isolation may be misleading insofar as different layers of the ad tech stack support one another to increase revenues and/or lower costs.

96.   On the other hand, the buyside/sellside P&Ls do not present a clean view of the particular product's profitability because they commingle upstream and downstream activity. This makes it difficult to assess any one product's profitability on a standalone basis. The MECE view P&L facilitates viewing these product P&Ls on a standalone basis but misses the synergies. Moreover, Google has since raised questions regarding the accuracy of some of its historical buyside/sellside product-level P&Ls.[89]

97.   Both the ordinary course buyside/sellside and MECE P&Ls present problems when it comes to isolating the profitability of transactions in the Relevant Product Markets identified in the United States' complaint, which consists of particular products and particular types of ads. Even the MECE P&Ls include in- and out-of-scope ad types. For example, the Google Ad Manager ("GAM") P&L contains revenue from open-web display advertising purchased via open auction (in-scope) and from preferred deals (out-of-scope). Additionally, it contains instream video ads (out-of-scope) and outstream video ads (in-scope). The Google Ads P&L suffers from the same drawbacks as GAM. [90]

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[87]   GOOG-DOJ-04004392, at -395 (09/10/2018) (emphasis in original).

[88]   GOOG-DOJ-04004392, at -395 (09/10/2018).

[89]   Defendant Google LLC's Supplemental Response to Interrogatory 3 of Plaintiffs' First Set of Interrogatories, August 16, 2023, at p. 3 ("While some documents created prior to 2021 might appear to reflect product level financial metrics on an ad hoc basis, Google cannot confirm that those documents were created using accurate and consistent methodologies to allocate revenues, profits, and costs across the various products."); Google LLC's Amended Supplemental Response to Interrogatory 3 of Plaintiffs' First Set of Interrogatories, September 8, 2023, at p. 7 ("Google has not been able to identify current Google Finance personnel with first-hand knowledge of these documents [pre-2018 product-level P&L analyses] or otherwise identify the process and methodology used in preparing these documents.").
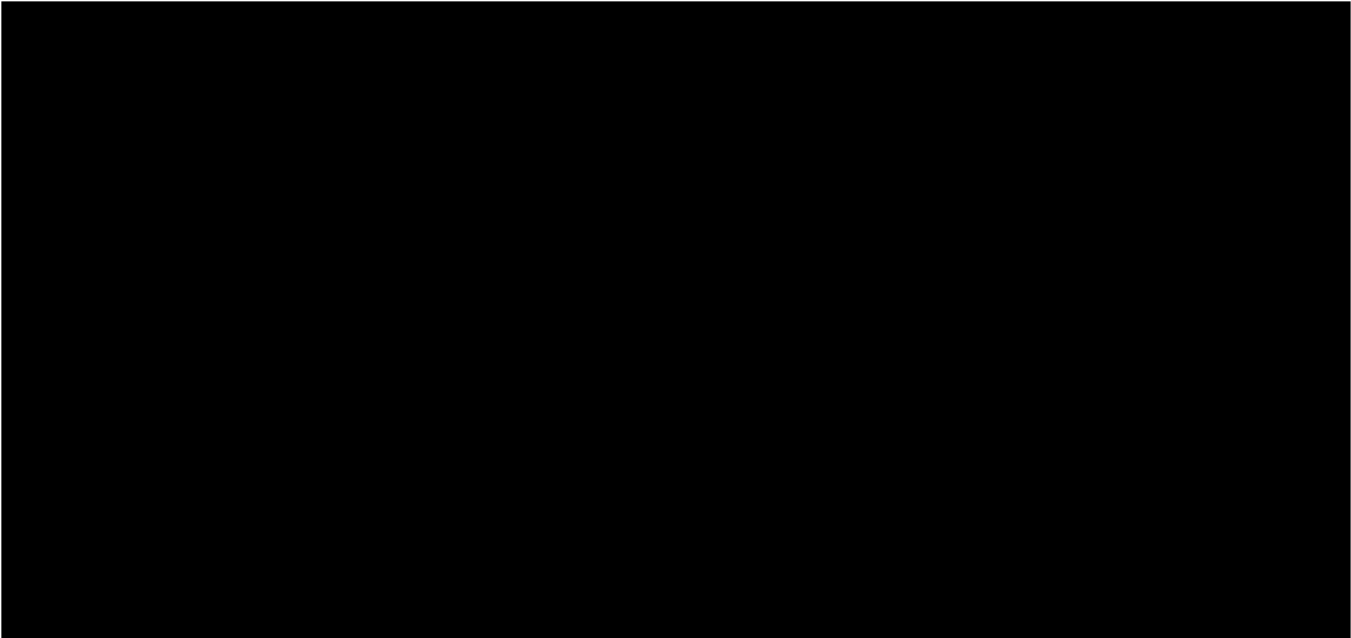
[90]   I know this from my review and analysis of the RFP60 Data, which allows me to see transactions which flowed through GAM, DV360, Google Ads, and other Google products. Each of these products contain in- and out-of-scope advertisements.

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2.   DVAA P&L Excluding AdMob

98.   In each year, Google prepared both overall DVAA and product-specific P&Ls. Given the information available to me, in my opinion, the most relevant P&L is the overall DVAA P&L with AdMob excluded because AdMob deals exclusively with ads which appear in apps, which are an excluded ad type. (Note: all the other product-level P&Ls have some connection to open-web display advertising—GAM, AdSense, and AwBid, the other three sellside P&Ls, all sell some open-web display ads, in addition to other ad formats like app, instream video, and display ads on platforms like connected TV and video game consoles.) In 2022, AdMob made up ▮▮▮▮▮▮▮ of DVAA's booked revenue.[91]

99.   In **Figure 28** below, I calculate a DVAA P&L excluding AdMob activity. I started with the DVAA P&L as seen in **Figure 23** and subtracted all the revenue and costs assigned to the AdMob P&L. Operating profit margin in this modified DVAA P&L excluding AdMob drops relative to the pure DVAA P&L in almost all years, suggesting that AdMob is more profitable than DVAA on average.

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[91]   ▮▮▮

[92]   *Note*: while this P&L does exclude AdMob, which deals almost exclusively with ads displayed in apps, there is still out-of-scope activity captured in this P&L. For example, advertisers can place display and video (including instream) ads into apps and connected TV via AdX (and not through AdMob), so this activity will still be commingled in the figure.

Sources: GOOG-AT-MDL-004039971, GOOG-DOJ-AT-02641400, GOOG-DOJ-AT-02645892, and GOOG-DOJ-AT-02649870.

Note: [I] is V10 (October) forecast.

100.   **Figure 28** above shows that Google's profits and operating profit margins for DVAA excluding AdMob steadily increased from 2016 through 2019 (sellside view). In particular, DVAA excluding AdMob turned a profit starting in 2018. ███████████████████████████████ ██ ██████████████████████████████████████

3.   Alternative DVAA P&L Excluding AdMob

a.   *Traffic Acquisition Costs and Principal/Agent Considerations*

101.   Google includes the costs that it pays for publisher inventory as "traffic acquisition costs," or "TAC." As the common size analysis in **Figure 24** shows, TAC is the single largest cost in the calculation of profit margins. As I discuss in this section, another valid way of accounting for TAC in the DVAA P&Ls would be to deduct TAC from revenues rather than treating it as part of cost of sales. If one were to do so, profit margins would increase significantly.

102.   Google, from an accounting perspective, considers itself a *principal* in most DVAA transactions, whereby Google provides a specified good or service.[93] Because Google considers itself a principal, in **Figure 23** and **Figure 24** above, Google treats TAC as a cost rather than as something that reduces the total amount of revenue.[94] Said differently, Google increases, or

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[93]   GOOG-AT-MDL-008930806 at 812 (09/2021) ("Ads Revenue Recognition (Gross vs. Net)"); Accounting Standards Codification ("ASC") 606-10-55-36 ("When another party is involved in providing goods or services to a customer, the entity should determine whether the nature of its promise is a performance obligation to provide the specified goods or services itself (that is, the entity is a principal) or to arrange for those goods or services to be provided by the other party (that is, the entity is an agent)." ASC is the codification of accounting standards into a single source of authoritative Generally Accepted Accounting Principles (GAAP) to be applied by nongovernmental entities.

[94]   ASC 606-10-55-37B ("When (or as) an entity that is a principal satisfies a performance obligation, the entity recognizes revenue in the gross amount of consideration to which it expects to be entitled in exchange for the specified good or service transferred."). GOOG1-00005951 at -953. ("The determination of whether we are a principal or an agent in a contract with a customer will determine whether TAC paid under an arrangement with a Google Network Member / third-party exchange / distribution partner is accounted for as cost of revenues or contra-revenue."). Based on Google's P&L, Google treats the majority of TAC as a cost rather than netting against revenue. A small portion relating to programmatic

grosses up, both Booked Revenues and Cost of Revenues by the amount of TAC. If Google were to consider itself an agent, Google would not increase Booked Revenues nor Cost of Revenues by the amount of TAC. Google would recognize in Booked Revenues only the revenue that it retains from each transaction (i.e., its "cut").[95] This would result in Booked Revenues being significantly lower. Google refers to Booked Revenues minus TAC as *Net Revenues*. If one uses Net Revenues instead of Booked Revenues to calculate profit margins, profit margins are significantly higher.[96] See **Figure 29** below for a simple example of these dynamics at play:

Figure 29: Comparing Profit Margins for Theoretical Principal vs Agent

		Principal	Agent
Booked Revenue	[1]	$100	$20
TAC	[2]	(80)	-
Other CoS	[3]	(5)	(5)
Gross Profit ($)	[4] = [1] + [2] + [3]	**15**	**15**
Gross Margin (%)	[5] = [4] / [1]	*15%*	*75%*

103.   As you can see in **Figure 29**, treating TAC as a cost results in gross profit of $15 and a gross profit margin of 15 percent. On the other hand, netting TAC against revenue for a total revenue of $20 (=$100 – $80) still yields a gross profit of $15, but increases the gross profit margin by 5 times to 75 percent. Below I discuss why I believe Google could be considered an agent in display ad transactions.

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guarantee and preferred deals (less than 10 percent for all years under review) is treated on a net basis. *See also*, Mok Deposition at 43:16 – 20 ("Q And is Google ever an agent? A Yes. Q Under what circumstances? A Programmatic guaranteed transactions, preferred deal transactions, and some exchange bidding transactions.").

[95]   ASC 606-10-55-38 ("When (or as) an entity that is an agent satisfies a performance obligation, the entity recognizes revenue in the amount of any fee or commission to which it expects to be entitled in exchange for arranging for the specified goods or services to be provided by the other party. An entity's fee or commission might be the net amount of consideration that the entity retains after paying the other party the consideration received in exchange for the goods or services to be provided by that party.").

[96]   *See, e.g.,* Mok Deposition at 46:25 – 47:10 ("Q If you were an agent rather than a principal, booked revenue would be lower; right? A Yes. Q Cost of sales would be lower; right? A Yes. Q Net revenue margins would be higher; right? A Yes. Q Gross margins would be higher; right? A Yes. Q Operating margins would be higher; right? A Yes.").

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104.   The determination of whether an entity is a principal or an agent is a complex accounting judgment which has significant consequences with regard to the computation of the entity's profit margins. The principal-agent assessment is a two-step process. The first step is to *identify the specified goods or services* to be provided to the customer.[97] This determination requires considerable judgment—as Google recognizes in its accounting policies.[98] Google has determined that the good/service it is providing is "enhanced ad inventory," which is the combination of providing ad inventory to advertisers (customers) and Google's "value add" in optimizing matches between publisher inventory and advertiser criteria.[99] However, I believe it would also be reasonable to consider the specified good or service that Google provides advertisers to simply be publishers' ad inventory.

105.   The second step is to assess whether Google has *control* over that specified good or service before it is transferred to the customer.[100] Under GAAP, an entity is a *principal* if it controls the specified good or service before that good or service is transferred to a customer.[101] Conversely, "An entity is an agent if the entity's performance obligation is to arrange for the provision of the

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[97] ASC 606-10-55-36A ("To determine the nature of its promise (as described in paragraph 606-10-55-36), the entity should: a. Identify the specified goods or services to be provided to the customer (which, for example, could be a right to a good or service to be provided by another party [see paragraph 606-10-25-18]).")

[98] *See, e.g.,* GOOG-AT-MDL-008930806 at -810 (09/2021) ("Ads Revenue Recognition (Gross vs. Net)") ("…we need to evaluate and determine the nature of our promise(s) to the customer by identifying the specified advertising product or service (or unit of accounting) to be provided to the customer. **This is a critical step and requires significant judgment.**") (emphasis added).

[99] GOOG-AT-MDL-008930621 at -624. (07/26/2021) ("…Google receives consideration from advertisers and in exchange, we source ads inventory from various publishers through AdSense, AdMob and AdManager to deliver advertisers' ads to the right audience. Said differently, we provide our customers with the *enhanced ad inventory*. The enhanced ad inventory is a combination of the following items: (1) the ad inventory, and (2) Google's 'value add.") (emphasis in original).

[100] ASC 606-10-55-36A ("To determine the nature of its promise (as described in paragraph 606-10-55-36), the entity should: …b. Assess whether it controls (as described in paragraph 606-10-25-25) each specified good or service before that good or service is transferred to the customer.").

[101] ASC 606-10-55-37 ("An entity is a principal if it controls the specified good or service before that good or service is transferred to a customer.").

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specified good or service by another party."[102] An agent does not control the specified good or service.[103]

106.   In the accounting literature, "control" refers to the ability of the entity "to direct the use of, and obtain substantially all of the remaining benefits from the asset," including "the ability to prevent other entities from directing the use of, and obtaining the benefits from, an asset."[104] In considering "control," an example here is instructive. For instance, Google's role could be considered similar to the auction house Sotheby's, who takes possession of art on consignment and serves as the exclusive agent for sellers to find buyers through the auction process.[105] Sotheby's performs a number of activities in connection with its auction consignment agreement "which culminate[] in the creation of a public marketplace for the sale and purchase of art that, if successful, results in the matching of the seller to a buyer."[106] If the sale is not completed because bidding does not reach a reserve price—a confidential minimum price agreed upon with the consignor—the sale is not completed and Sotheby's is not due a commission.[107] Similarly, if a buyer defaults on a payment, the sale is cancelled and the property is returned to the consigner.[108] Despite serving as the exclusive agent for sellers to find buyers, Sotheby's considers itself an agent in accounting for its auction activities.[109]

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[102] ASC 606-10-55-38 ("An entity is an agent if the entity's performance obligation is to arrange for the provision of the specified good or service by another party.").

[103] ASC 606-10-55-38 ("An entity that is an agent does not control the specified good or service provided by another party before that good or service is transferred to the customer.").

[104] ASC 606-10-25-25. ("Control of an asset refers to the ability to direct the use of, and obtain substantially all of the remaining benefits from, the asset. Control includes the ability to prevent other entities from directing the use of, and obtaining the benefits from, an asset.")

[105] *See, e.g.,* Sotheby's 2018 10-Q, at pp. 14-15.

[106] *Id.*, at p. 15.

[107] *Id.*, at p. 15 ("However, if the bidding for an individual artwork does not reach its reserve price (i.e., the confidential minimum hammer price at which the consignor has agreed to sell), the sale is not completed, and we are not entitled to collect a commission.").

[108] *Id.,* at p. 16 ("Under the standard terms and conditions of our auction sales, we are not obligated to pay the consignor for property that has not been paid for by the buyer. If a buyer defaults on payment, the sale is cancelled, and the property is returned to the consignor.").

[109] *Id.*, at p. 15 ("Accordingly, the consignor receives the benefit of our auction service only when the sale is completed, upon the fall of the auctioneer's hammer, at which point in time we recognize our auction commission revenue.").

107.   Similar to Sotheby's, once a publisher puts ad inventory available on one of Google's sell-side platforms, Google has an exclusive agreement with the publisher to perform activities that culminate in the matching of a publisher to an advertiser. Such an exclusive arrangement does not mean that Google has "control" or that Google is the principal in its auction activities.

108.   GAAP also provides three indicators that an entity controls the good or service: (a) the entity has primary responsibility for fulfilling the promise to provide the good or service, (b) the entity has inventory risk, and (c) the entity has discretion in establishing the price.[110] While Google arguably does have primary responsibility for the promise to match ad inventory with advertisers, it does not meet the other two indicators. As Google states in its accounting policies, it "does not have substantive inventory risk as [it] do[es] not purchase ad inventory from the publishers in advance of sale to [its] customers."[111] With respect to the third indicator, the pricing is primarily driven by floors provided by the publishers and bid limits set by advertisers. Thus one could conclude that Google does not have primary discretion in establishing the price. Consistent with Sotheby's accounting treatment, it would be reasonable to conclude that Google was an agent in the at-issue transactions.

109.   Indeed, other ad tech service providers, including Magnite Inc. and PubMatic, consider themselves to be *agents*, whereby they arrange for one party (the publisher) to provide a specified good or service to another party (the advertiser), *i.e.,* their role in display ad transactions is akin to that of a broker helping two parties make a deal.[112] Other companies that provide ad tech services

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[110]   ASC 606-10-55-39.

[111]   GOOG-AT-MDL-008930621, at -627 (07/26/2021).

[112]   ASC 606-10-55-36 ("When another party is involved in providing goods or services to a customer, the entity should determine whether the nature of its promise is a performance obligation to provide the specified goods or services itself (that is, the entity is a principal) or to arrange for those goods or services to be provided by the other party (that is, the entity is an agent)." Magnite, Inc. 2020 10-K, p. 47 ("We generate revenue from the purchase and sale of digital advertising inventory through our platform. We also generate revenue from the fee we charge clients for use of our Demand Manager product, which generally is a percentage of the client's advertising spending on any advertising marketplace. We recognize revenue upon the fulfillment of our contractual obligations in connection with a completed transaction, subject to satisfying all other revenue recognition criteria. For substantially all transactions executed through our platform, we act as an agent on behalf of the publisher that is monetizing its inventory, and revenue is recognized net of any advertising inventory costs that we remit to sellers."). Pubmatic discloses that it records revenue as an agent. *See* Pubmatic 2022 10-K, at p. 73 ("The Company has determined that it does not act as the principal in the purchase and sale of digital advertising inventory because it does not control

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also record revenue as agents.[113] Moreover, some employees at Google have constructed DVAA P&Ls showing "operating profits relative to net revenue,"[114] whereby TAC is netted against revenue, as though Google were an agent, not a principal. In one email exchange between two Google finance employees, one stated, "[G]iven the way the P&L is constructed, with all principal (O&O) businesses stripped out, and only "agent" (intermediary) businesses included in the P&L, the economics are never going to look great. Another way to look at the P&L is: operating profits relative to net revenue, **similar to how most agency businesses report their financials**. On that basis, operating profit percent goes from ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮. I shared this

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the advertising inventory and it does not set the price which is the result of an auction within the marketplace. Based on these and other factors, the Company reports revenue on a net basis.").

[113] Criteo records revenue for its Criteo Marketing Solutions and certain revenue from the Criteo Retail Media segment as a principal while it records other revenue from the Criteo Retail Media segment and that from Iponweb as an agent. *See* Criteo S.A. 2022 10-K, at p. F-17 ("We act as principal in our Criteo Marketing Solutions arrangements because (i) we control the advertising inventory before it is transferred to our clients; (ii) we bear sole responsibility in fulfillment of the advertising promise and bear inventory risks and (iii) we have full discretion in establishing prices…We act either as principal or as agent in our Criteo Retail Media segment. For the arrangements related to transactions using our legacy Retail Media solutions, we consider that we act as principal, as we exercise significant control over the client's advertising campaign. For arrangements related to transactions using our Platform, a self-service solution providing transparency, measurement and control to our brand, agency and retailer customers, we act as agent, because we (i) do not control the advertising inventory before it is transferred to our clients, (ii) do not have inventory risks because we do not purchase the inventory upfront and (iii) have limited discretion in establishing prices as we charge a platform fee based on a percentage of the digital advertising inventory purchased through the use of the platform…We act as agent in Iponweb provided solutions as we (i) do not control the advertising inventory before it is transferred to our clients, (ii) do not have inventory risks because we do not purchase the inventory upfront and (iii) have limited discretion in establishing prices as we charge a fee based on a percentage of the digital advertising inventory traded through our solutions.").

Tremor, which purchased Amobee in September 2022, discloses that it records transactions as an agent. *See* "Tremor International Ltd 2022 Annual Report," p. 47 ("The Company concluded that its Programmatic activity (i) does not have manual control over the process, (ii) the Company is not primarily responsible for fulfillment, (iii) the Company has no inventory risk and (iv) the Company obtains only momentary a title to the advertising space offered via the end-to-end platform. As a result, the Company reports its Programmatic business, tech stack, features, business models and activity as an agent and therefore presented revenue from Programmatic on a net basis.").

[114] GOOG-DOJ-09729045 at -046 (11/28/2017) ("DVAA").

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alternative way to look at the P&L with Kristin before, she seemed receptive to it." (emphasis added)[115] I assume Google management would be interested in looking at the profitability in this way because they measure their performance against the revenues they actually retain—not revenues that include amounts shared with their publisher partners. The revenues that are shared with the publishers are fixed and beyond the control of the managers; to the extent management could improve profitability, it would be through controlling costs other than TAC.

b. *Alternative DVAA P&L Excluding AdMob (Net Revenue Basis)*

110.   **Figure 30** below depicts a DVAA Excluding AdMob P&L if, in the alternative, Google could be considered an agent in display ad transactions. As discussed earlier, Google refers to Booked Revenues minus TAC as Net Revenues. Treating Net Revenues as the top line in the DVAA Alternative P&L does not change the dollar amounts of gross or operating profit. However, it does have the effect of amplifying the margins on a percentage basis because revenues (denominator) decrease but dollar profits (numerator) remain the same, making negative profit margins more negative and positive profit margins more positive. For example, comparing **Figure 28** (booked revenue basis) to **Figure 30** (net revenue basis), the 2022 operating profit margin is 6 percent on a booked revenue basis but 18 percent on a net revenue basis. **Figure 31** is a summary of the profit margins from both **Figure 28** (booked revenue basis) and **Figure 30** (net revenue basis).

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115   *Id.*

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XIV. Appendix D: Supporting Figures

Figure 35: AdX Overcharge for FAA Purchase Pathways
January 25, 2019 – January 24, 2023

		Census	CMS	Navy	NHTSA	US Air Force	US Army	USPS	VA	Total
AdX Revenues	[1]	$ 1,079,785	$8,478,727	$728,470	$1,588,607	$4,758,948	$13,935,407	$6,776,251	$4,443,235	**$41,789,429**
AdX Actual Take	[2]	210,750	1,500,431	131,525	288,417	865,290	2,642,574	1,259,430	822,580	**7,720,993**
With 10% AdX But-For Take Rate										
AdX But-For Take	[3] = [1] x 10%	107,979	847,873	72,847	158,861	475,895	1,393,541	677,625	444,323	**4,178,943**
AdX Overcharge	[4] = ([2] - [3]) x 99%	101,744	646,033	58,092	128,260	385,501	1,236,543	575,987	374,474	**3,506,629**
AdX Overcharge to FAAs	[5] = [4] x 19.3%	19,637	124,684	11,212	24,754	74,402	238,653	111,166	72,273	**676,779**
Total Overcharge as a % of But-For Take	[6] = [4] / [3]	*94%*	*76%*	*80%*	*81%*	*81%*	*89%*	*85%*	*84%*	***84%***
With 16.2% AdX But-For Take Rate										
AdX But-For Take	[7] = [1] x 16.2%	174,925	1,373,554	118,012	257,354	770,950	2,257,536	1,097,753	719,804	**6,769,777**
AdX Overcharge	[8] = ([2] - [7]) x 99%	35,467	125,609	13,378	30,752	93,397	381,187	160,061	101,748	**941,594**
AdX Overcharge to FAAs	[9] = [8] x 19.3%	6,845	24,242	2,582	5,935	18,026	73,569	30,892	19,637	**181,728**
Total Overcharge as a % of But-For Take	[10] = [8] / [7]	*20%*	*9%*	*11%*	*12%*	*12%*	*17%*	*15%*	*14%*	***14%***
With 16.6% AdX But-For Take Rate										
AdX But-For Take	[11] = [1] x 16.6%	179,244	1,407,469	120,926	263,709	789,985	2,313,278	1,124,858	737,577	**6,937,045**
AdX Overcharge	[12] = ([2] - [11]) x 99%	31,191	92,033	10,493	24,461	74,552	326,003	133,227	84,153	**776,108**
AdX Overcharge to FAAs	[13] = [12] x 19.3%	6,020	17,762	2,025	4,721	14,388	62,919	25,713	16,242	**149,789**
Total Overcharge as a % of But-For Take	[14] = [12] / [11]	*17%*	*7%*	*9%*	*9%*	*9%*	*14%*	*12%*	*11%*	***11%***

Sources: [1]: **Figure 16**, column [A]. [2]: **Figure 16**, column [B]. *Note*: USPS pathways only include amounts from January 2021 onward.

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Figure 36: AdX Overcharge to FAAs through DV360 and Google Ads
January 25, 2019 – January 24, 2023

		Census	CMS	Navy	NHTSA	US Air Force	US Army	USPS	VA	Total
AdX Revenues	[1]	$ 1,079,785	$ 8,478,727	$ 237,307	$ 1,588,607	$ 4,758,948	$ 13,935,407	$ 6,734,684	$ 4,443,235	$ 41,256,699
AdX Actual Take	[2]	210,750	1,500,431	39,856	288,417	865,290	2,642,574	1,251,672	822,580	7,621,571
Platform Fee	[3]	91,772	1,275,399	38,631	189,407	400,869	1,163,738	572,447	547,655	4,279,919
With 10% AdX But-For Take Rate										
AdX But-For Take	[4] = [1] x 10%	107,979	847,873	23,731	158,861	475,895	1,393,541	673,468	444,323	4,125,670
AdX Overcharge	[5] = ([2]-[4]) x 99%	101,744	646,033	15,964	128,260	385,501	1,236,543	572,422	374,474	3,460,942
AdX Overcharge to FAAs	[6]=[5] x 19.3%	19,637	124,684	3,081	24,754	74,402	238,653	110,477	72,273	667,962
With 16.2% AdX But-For Take Rate										
AdX But-For Take	[7] = [1] x 16.2%	174,925	1,373,554	38,444	257,354	770,950	2,257,536	1,091,019	719,804	6,683,585
AdX Overcharge	[8] = ([2]-[7]) x 99%	35,467	125,609	1,399	30,752	93,397	381,187	159,047	101,748	928,606
AdX Overcharge to FAAs	[9]=[8] x 19.3%	6,845	24,242	270	5,935	18,026	73,569	30,696	19,637	179,221
With 16.6% AdX But-For Take Rate										
AdX But-For Take	[10] = [1] x 16.6%	179,244	1,407,469	39,393	263,709	789,985	2,313,278	1,117,957	737,577	6,848,612
AdX Overcharge	[11] = ([2]-[10]) x 99%	31,191	92,033	459	24,461	74,552	326,003	132,378	84,153	765,229
AdX Overcharge to FAAs	[12]=[11] x 19.3%	6,020	17,762	89	4,721	14,388	62,919	25,549	16,242	147,689

Sources: [1]: **Figure 16**, column [A]. [2]: **Figure 16**, column [B]. *Note*: USPS pathways only include amounts from January 2021 onward.

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Figure 37: Platform Fees Overcharge to FAA Purchase Pathways
January 25, 2019 – January 24, 2023

		Census	CMS	Navy	NHTSA	US Air Force	US Army	USPS	VA	Total
AdX Revenues	[1]	$ 1,079,785	$8,478,727	$ 237,307	$ 1,588,607	$4,758,948	$13,935,407	$6,734,684	$4,443,235	**$41,256,699**
Platform Fee	[2]	91,772	1,275,399	38,631	189,407	400,869	1,163,738	572,447	547,655	**4,279,919**
	[3] = [2] / [1]	8%	15%	16%	12%	8%	8%	8%	12%	**10%**
Platform Fees % of AdX Revenues										
With 10% AdX But-For Take Rate										
AdX Overcharge to FAAs	[4]	19,637	124,684	3,081	24,754	74,402	238,653	110,477	72,273	**667,962**
Platform Fee Overcharge	[5] = [4] x [3]	1,669	18,755	502	2,951	6,267	19,930	9,391	8,908	**68,373**
With 16.2% AdX But-For Take Rate										
AdX Overcharge to FAAs	[6]	6,845	24,242	270	5,935	18,026	73,569	30,696	19,637	**179,221**
Platform Fee Overcharge	[7] = [6] x [3]	582	3,647	44	708	1,518	6,144	2,609	2,420	**17,672**
With 16.6% AdX But-For Take Rate										
AdX Overcharge to FAAs	[8]	6,020	17,762	89	4,721	14,388	62,919	25,549	16,242	**147,689**
Platform Fee Overcharge	[9] = [8] x [3]	512	2,672	14	563	1,212	5,254	2,172	2,002	**14,401**

Sources: [1]: **Figure 16**, column [A], total for each FAA. [2]: **Figure 16**, column [C], total for each FAA. [4], [6], [8]: **Figure 36** [5], [8], [11], respectively. **Figure 36** is a reprise of **Figure 35** but excluding TTD-related damages.

Notes: This analysis only calculates the Platform Fees Overcharge for spend through DV360 and Google Ads. USPS pathways include amounts from January 2021 onward.

Figure 38: Sensitivity Analysis for Damages to FAAs
($000s)

Advertiser Share	1.0%	2.0%	3.0%	4.0%	5.0%	6.0%	7.0%	8.0%	9.0%	10.0%	11.0%	12.0%	13.0%	14.0%	15.0%	15.6%	15.7%	16.0%	16.2%	16.6%
15.0%	$ 1,085	$ 1,022	$ 960	$ 898	$ 836	$ 774	$ 712	$ 650	$ 588	$ 526	$ 464	$ 402	$ 340	$ 278	$ 216	$ 178	$ 172	$ 154	$ 141	$ 116
16.0%	1,157	1,091	1,024	958	892	826	760	693	627	561	495	429	362	296	230	190	184	164	151	124
17.0%	1,229	1,159	1,088	1,018	948	877	807	737	666	596	526	455	385	315	244	202	195	174	160	132
18.0%	1,301	1,227	1,152	1,078	1,004	929	855	780	706	631	557	482	408	333	259	214	207	184	169	140
19.0%	1,374	1,295	1,217	1,138	1,059	981	902	823	745	666	588	509	430	352	273	226	218	195	179	147
19.3%	1,395	1,316	1,236	1,156	1,076	996	916	836	757	677	597	517	437	357	278	230	222	198	182	150
20.0%	1,446	1,363	1,281	1,198	1,115	1,032	950	867	784	701	619	536	453	370	288	238	230	205	188	155
21.0%	1,518	1,431	1,345	1,258	1,171	1,084	997	910	823	736	650	563	476	389	302	250	241	215	198	163
22.0%	1,591	1,500	1,409	1,318	1,227	1,136	1,045	953	862	771	680	589	498	407	316	262	253	225	207	171
23.0%	1,663	1,568	1,473	1,377	1,282	1,187	1,092	997	902	807	711	616	521	426	331	274	264	236	217	179
24.0%	1,735	1,636	1,537	1,437	1,338	1,239	1,139	1,040	941	842	742	643	544	444	345	286	276	246	226	186
25.0%	1,808	1,704	1,601	1,497	1,394	1,290	1,187	1,084	980	877	773	670	566	463	360	297	287	256	235	194
26.0%	1,880	1,772	1,665	1,557	1,450	1,342	1,234	1,127	1,019	912	804	697	589	481	374	309	299	266	245	202
27.0%	1,952	1,840	1,729	1,617	1,505	1,394	1,282	1,170	1,058	947	835	723	612	500	388	321	310	277	254	210
28.0%	2,024	1,909	1,793	1,677	1,561	1,445	1,329	1,214	1,098	982	866	750	634	518	403	333	322	287	264	217
29.0%	2,097	1,977	1,857	1,737	1,617	1,497	1,377	1,257	1,137	1,017	897	777	657	537	417	345	333	297	273	225
30.0%	2,169	2,045	1,921	1,797	1,673	1,548	1,424	1,300	1,176	1,052	928	804	680	556	431	357	345	307	282	233
31.0%	2,241	2,113	1,985	1,857	1,728	1,600	1,472	1,344	1,215	1,087	959	831	702	574	446	369	356	318	292	241
32.0%	2,314	2,181	2,049	1,916	1,784	1,652	1,519	1,387	1,255	1,122	990	857	725	593	460	381	368	328	301	248
33.0%	2,386	2,249	2,113	1,976	1,840	1,703	1,567	1,430	1,294	1,157	1,021	884	748	611	475	393	379	338	311	256
34.0%	2,458	2,318	2,177	2,036	1,896	1,755	1,614	1,474	1,333	1,192	1,052	911	770	630	489	405	390	348	320	264
35.0%	2,531	2,386	2,241	2,096	1,951	1,807	1,662	1,517	1,372	1,227	1,083	938	793	648	503	416	402	359	330	272
...																				
100.0%	$ 7,182	$ 6,766	$ 6,351	$ 5,936	$ 5,520	$ 5,105	$ 4,690	$ 4,275	$ 3,859	$ 3,444	$ 3,029	$ 2,613	$ 2,198	$ 1,783	$ 1,367	$ 1,367	$ 1,367	$ 952	$ 869	$ 1,367

Sources: Google Ads Monthly Data, DV360 XBridge Monthly Data, XP Daily Monthly Data, DV360 Monthly Data, TTD_DOJ-GOOG23-0012987, and TTD_DOJ-GOOG23-0033644. *Note*: USPS pathways only include amounts from January 2021 onward.

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